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ACNE VULGARIS

By
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Acne Vulgaris is described by Pusy as "Folliculitis of the Sebaceous glands." All true Acne lesions originate with the sebaceous glands and follicles. The lesions vary from simple comedones, papules and pustules on an oily base, to large deep-seated abscesses with areas of destruction and pus formation. These latter lesions often form large pus sacks, and cause partial destruction of the sub-cutaneous tissues resulting in severe scar formation. True Acne is practically always accompanied by oily Seborrhoea and at times Seborrhoeic Dermatitis involving the adjacent skin areas. The disease is usually confined to the face, neck and upper portion of the back and chest. In some types of Acne, this scar formation is so severe that it ranks Acne as the greatest of all scar forming diseases, Small Pox not excepted. This type is usually associated with some definite constitutional defect which may persist over a period of years without discovery finally resulting in severe impairment of the individual's general health, and abnormal mental states due to the disfiguring scars. This is especially true in young girls whose whole life is necessarily affected by their appearance.

On the other hand, it may be a mild disease, a more or less physiological condition. This type of Acne is the one we usually think of when the subject is referred too. It manifests itself as a mild Seborrhoea, over-activity of the oil glands, comedones, papules and occasional pustules coming on particularly at the age of puberty. It varies in severity over a period of months or a few years and gradually clears completely leaving very little if any permanent scars. If all cases were of this type, there would be no need to be concerned about this condition. Unfortunately, this type is in the minority instead of the majority. The many cases of this more or less normal type, that clear up without treatment, have lead parents and the medical profession to neglect the treatment. No case of Acne, no matter how mild, should be considered in this light. Much can be done at the age of puberty not only to cure the mild types, but to prevent the development of the severe types. At the same time by a study of the cause and probable course of the early cases, we may be able to correct some important constitutional defect that may later seriously undermine the health of the individual. Acne, then should be studied and treated in practically all cases.

In order to arrive at some logical method of treatment, it is necessary to know something of the etiology of Acne. Even though it is a distinct disease entity, it is caused by so many different pathiological conditions, that it is often helpful to consider it as a symptom rather than a definite disease. This attitude may help materially in the proper treatment. Acne should be studied with the following etiological possibilities in mind.

First; mild Acne Vulgaris is usually associated with normal adolescence; with normal menstruation and a slight aggravation of symptoms at twelve to fourteen years of age. It is characterized by excessive oily secretions; fine discrete papules and occasional pustules; all in healthly individuals. There is no suggestion of any severe underlying constitutional cause and it usually adjusts itself without treatment over

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a period of a few months to two or three years. The treatment of this type of Acne is very simple. It is usually due to excessive oil, therefore the first indication of treatment is some restriction as to the very rich diets, particularly less candies, sugar and fried greasy foods. Locally the frequent use of soap and water followed by the application of astringent lotions. Never use greases of any kind on this type. You are dealing with an oily Seborrhoea that will be aggravated by any greasy ointment.

Second; Acne asociated with menstrual disturbances. Occasionally we find severe Acne of many years duration definitely connected with the menstrual periods. They are usually worse just before and during the menstrual period. Appropriate glandular therapy and other measures to correct the menstrual pathology is usually followed by improvement of the Acne. Some of these cases are so obstinate that they finally come to operation, the causative factor may vary from simple misplacement, low grade chronic pelvic inflammation, to large ovarian tumors. Then there are cases that do not get well until after the first pregnancy.

Third: Gastro-intestinal. The intestinal flora as it varies from time to time in some individuals is followed by outbreaks of Acne. The diet may be all that is desired, constipation and other hygienic measures may be corrected and still there may persist a disturbance of the mysterious -ph- of the intestinal flora that will cause a chronic Acne. The correction of this pathology is often difficult. Attempts to change the intestinal flora by the ingestion of Bulgarian Milk, coarse bulky foods, and measures to increase the fermentation by the administration of yeast, may correct the situation. Yeast has been widely advertised as a cure all, and in those cases where auto-intoxication and constipation are important factors, the administration of yeast is helpful. Hazen on the other hand, has reported three cases of Acne definitely proven to be due to yeast. The point to be learned here is that the intestinal flora is so profoundly influenced by different nervous and emotional states that no one line of treatment can be successfully carried out in all cases. The digestive disturbances, particularly related to the secretion of HCL in the stomach often bears a true relation to Acne. This is seen more in Acne Rosacea which is practically always asociated with a deficiency of HCL in the stomach. Acne Rosacea is an entirely different disease and seldom associated with true Acne Bulgaris. The former is closely associated with the emotional disturbances and it is a disease of middle life more than of adolescence.

Fourth; Foods play an important part in the production of Acne. In the young adolescent age, the Acne is often aggravated by excessive starchy and greasy foods, and our first thought in the treatment of Acne should be the correction of abnormal diets. A well balanced diet with plenty of vegetables and fruits and with the elimination of excessive starches and greasy foods, should be maintained in the treatment of all Acnes. The old idea that all skin eruptions are due to acid in the blood and the consequent elimination of fruits and such foods as tomatoes, etc., is fallacious. The question of food allergy or true sensitization in Acne plays a minor part. I rarely find any definite food reaction in Acne, either by the scratch or intradermal test. When definite food reactions are found the elimination of those foods does not seem to materially influence typical Acne. There are however, certain types of Acne that are due to specific foods. These cases persist into the twenties and even later and are characterized by recurrent attacks of small papules, seldom pustules, on a more or less dry skin. It is not the true Acne associated with Seborrhoea and never proceeds to large pustules and deep scar formation. White of Cleveland, found that this type of Acne which showed no specific food reactions by scratch or intra-dermal tests, but when placed on elimination diets, offending foods are found to be the direct cause of the eruption. To illustrate; I treated a young lady twenty-two years old, with x-ray and astringent lotions without improvement. Extensive food tests were done, all of which were negative. When placed on one of the elimination diets as advocated by Rowe, her face cleared completely. On the gradual addition of foods, the Acne eruption recurred when milk was given. This lady showed negative reactions to both the scratch and intra-dermal tests for milk. This is an illustration showing that certain types of

Acne are due to specific foods and do not show any specific reactions by scratch and intradermal tests.

Fifth; Sugar tolerance is considered an important etiological factor in Acne Vulgaris. Investigations have been made endeavoring to prove that a true relationship existed between low sugar tolerance with consequent increase in blood sugar and altered skin secretions in the production of Acne lesions. The theory being that the excessive sugar in the blood and secretions enhances the growth of local pyogenic organism. So far there are no reports in the literature indicating that Acne is associated with hyperglycemia. The clinical evidence however, is fairly conclusive that increased sugar aggravates Acne. The opinion has been expressed that this might be explained on the basis of inadequate laboratory methods for the proper determination of blood sugar.

Sixth; Vaccines have been used extensively in the treatment of Acne. I use vaccines very seldom. The expense of preparing an autogenous vaccine and the time it takes to give a course of treatment, together with the very uncertain results renders this type of treatment unsuitable for Acne. Certain types of Acne are supposed to be due to a lack of proper gluttens in the blood. Intravenous administration of a vaccine such as Typhoid sometimes helps. Liver diet is also helpful in the same cases.

Seventh; Severe Acne with scar formation extending into the twenties and even into the thirties has for a long time been thought to be connected in some way with tuberculosis. Either as a tuberculide (that is a toxic eruption from some old foci of tubercular infection) or a real tuberculosis due to an attenuated form of the tubercle bacillus. One German author took cultures from Acne lesions injected them in successive generations of guinea-pigs, finally developing a virulent tuberculosis in the guinea-pigs, proving that certain types of Acne are tubercular in origin. Other Acne-like lesions of the face have recently been proven to be tuberculides. That is an eruption with tubercular structure but toxic in character and not due to the invasion of tubercular organism in the local lesion. With this information, certain types of Acne are now being treated successfully with tuberculin.

In recent years the salt restricted diets of Gerson and Hermannsdorfer-Sauerbruch have been used successfully in the treatment of tuberculosis of the skin. The theory of this diet is that the excessive sodium in the skin secretions derived from table salt acts as an irritant to the capillaries in the skin. An electrolytic disturbance of the cation balance. In an effort to correct the cation balance an equilibrated salt consisting of excess of calcium, magnesium and potassium ions have been substituted for ordinary table salt-sodium chloride. Theoretically this corrects the normal mineral content of the skin. This diet has also been used successfully in the treatment of scar forming Acnes which seems to me, to be further proof that these Acnes are tubercular in origin.

Eighth; Foci of infection. Infected teeth, sinuses, tonsils, appendix, gall bladder and any other infected area is capable of causing Acne. These foci should be diligently searched for in any Acne of obscure origin. Only recently, I had a case of Acne, which after the tonsils were removed, the Acne flared up, became very acute followed by disappearance of the lesions without further treatment similar to the reactions seen in rheumatism and neuritis following removal of foci of infection.

The local treatment of Acne should follow after the study of the various etiological factors enumerated above. Astringent lotions, and soap and water should be used to combat the local oily Seborrhoea. Ointments should never be used except in very rare conditions where the skin is dry. X-ray undoubtedly is the best local remedy and when used properly by experienced hands is a safe and efficient remedy. Its improper use, however, is often followed by disastrous results. Ultra-Violet Light in combination with astringent lotion locally and cod liver oil internally, is helpful in certain cases. There are several forms of collodial sulphur that are used in the treatment of Acne lesions which seem to be far superior to many of the ordinary astringent lotions. Other preparations may be given by mouth or intra-muscularly.

To conclude—Acne Vulgaris is a serious dis-

ease of constitutional origin requiring thorough study for its proper treatment.

DISCUSSION

Dr. John M. Van de Erve, Charleston:

Dr. Allison has presented a masterly resume of a difficult treatment problem. Many of us have thrown up our hands when confronted with it.

There are just two points to which I wish to call your attention. One is the use of iodized salt. It seems to me that in this part of the country, where we apparently have sufficient iodin in our food products, the use of iodine in table salt may be an aggravating factor. Iodine has been proved in a few cases to be a causative factor. It seems to me, therefore, that in mild cases it might be well to advise the patient that the salt used in cooking and at table be free from iodin.

Usually only the severe cases of acne are seen by the dermatologist. Most cases are seen by the family physician. Therefore the ideal treatment of acne would be in the hands of the family physician, who can obtain the cooperation of the mother of the child and prevent the occurrence, later in life, of acne. It is comparatively easy to pick up the seborrheic skin that later eventuates in acne. If you find scurf or dandruff on the scalp with blackheads or comedones on the face, if you take the case at this stage and regulate the diet, give endocrine treatment if necessary, and use local treatment, secure good elimination, etc., it may prevent the occurrence of acne. Use soap and water to remove the oily secretion; then use an astringent lotion. *Lotio alba* is probably the simplest, beginning with quarter strength and working up to full strength. Many of these children may be spared a severe acne in later life, with consequent pitting and scarring.

Dr. Allison, closing the discussion:

I think Dr. Van de Erve's point about the iodine salts aggravating the Acne is very possible and glad that he mentioned this fact. The doctor evidently knows this subject very well and I am glad to welcome him to South Carolina as a Dermatologist.

LATERAL SINUS THROMBOSIS

By

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This article has been prepared with the particular hope that the general practitioner might find it interesting and of value. Complete omission of theoretical discussion has been attempted. Briefness has been sought in keeping with accuracy and completeness.

It is the general practitioner who usually first gets patients with discharging ears and, consequently, it is up to him quite often to decide the proper disposition of the cases. He is at once confronted with the question whether to advise palliative treatment, to advise consulting an otologist, or whether surgical interference is urgent. To those physicians practicing in rural areas this decision is often of considerable financial importance to the patient as a trip to a distant specialist is expensive. If the physician is familiar with the more frequent and more important usual complications of discharging ears he is in a better position to decide wisely.

With these facts in mind, in addition to discussing lateral sinus thrombosis, this paper includes, under 'differential diagnosis', the differentiation of this condition from meningitis and brain abscess secondary to ear infection.

Contradictory statements about this condition are fairly frequent in the literature. One text (1) states that the patient is nauseated, labors under vertigo, is very restless, —; similarly, a second (2) states that the condition usually gives rise to headache, vertigo, vomiting, slowing of the pulse, —. Contrarily, a third (3) teaches that, in these cases, headache means meningeal irritation, that vomiting and headache together are especially indicative of cerebral involvement (abscess), and that nystagmus is strong evidence of cerebellar involvement (abscess).

This paper represents a study of some outstanding works on ear, nose, and throat diseases (4) together with a series of eighteen case histories. The author was interested to note that the findings in these 18 records paralleled closely the description set forth by Jackson and Coates in their text 'The Nose, Throat, and Ear and Their Diseases'.

Definition.—Lateral sinus thrombosis and lateral sinus thrombophlebitis are terms used clinically more or less synonymously to indicate the presence of thrombosis, associated with inflammation, of the lateral sinus, the disease being most frequently a complication of infection in the middle ear, particularly mastoiditis, and characterized clinically by remittent fever, polymorphonuclear leukocytosis, and often a positive blood culture.

Anatomy.—The cranial venous sinuses consist of spaces lined with endothelial cells walled in by dura mater. They do not have valves. There are two lateral sinuses, a right and a left, known also as transverse sinuses. Each begins at the internal occipital protuberance (as the continuation of other sinuses), passes laterally and anteriorly across the internal surface of the occipital and parietal bones, turns inferiorly on the medial surface of the mastoid temporal bone, and then pursues a tortuous course inferiorly, medially, and anteriorly to the jugular foramen where it joins the jugular vein. The tortuous portion is termed the sigmoid (s-shaped) sinus. The sigmoid sinus particularly is in close relationship to the mastoid cells of the middle ear.

Etiology.—Thrombosis, associated with inflammation, in veins in general, or even in arteries, is not especially rare. Thromboangiitis obliterans, typhoid and typhus fever, scalp and facial wounds and infections, any generalized or localized infection, senility, marasmus, pregnancy, poor circulation from any cause (decompensated heart disease, for instance), and even normal anatomical structure (pressure of the right common iliac artery on the left common iliac vein) have all been accused as causes and probably each has at some time been guilty.

However, while true that any of the above factors may be etiologic, lateral sinus thrombosis is almost always secondary to middle ear disease.

Due to any one or more of the factors mentioned below the middle ear infection (mastoiditis or purulent otitis media or whatever the condition be) reaches the wall of the sinus and then causes the formation of a thrombos, probably as a result of injury to the endothelial cells lining the sinus.

The factors chiefly concerned in the spread of the infection to the sinus are (a) direct extension by bony necrosis, (b) retrograde thrombophlebitis of the small venules passing from the middle ear through the intervening bone to the sinus, (c) extension through the bloodstream as a result of bacteremia, (d) the carrying of the infection from the middle ear to the sinus by the surgeon at time of operation on the middle ear, (e) the virulence of the infecting organism, (f) the resistance of the host, and (g) the improper performance of, or neglect to perform, myringotomy with the resulting accumulation of pus in the middle ear.

Sometimes, of course, when the infection reaches the wall of the sinus (phlebitis) the condition stops there: does not go on into the stage of thrombosis. This phlebitis is thought to be more serious than thrombosis in that the latter is looked upon as being, at least at times, protective. It is a clinically established fact that a larger portion of cases of phlebitis give a positive blood culture than do thrombosis (thrombophlebitis).

Once the sinus becomes involved the process may remain as a localized one; it may spread cranially and involve the rest of the lateral sinus, the sagittal sinus, the cavernous sinus or, indeed, any of the venous sinuses; or, it may spread inferiorly and involve the jugular vein.

Symptomatology.—Familiarity with the anatomy and etiology described above makes the symptomatology more easily understood.

Usually the case presents a history of an upper respiratory infection, especially nasopharyngitis, which was complicated by the development of otitis media and, most often, mastoiditis. Many of the cases give a history of a recent mastoid operation.

The onset is characteristically marked by a sudden, unexpected, rise of temperature to 103 or 104 degrees or more. There may or may not be a preceding chill. Then, after a variable time, usually a few hours, the temperature falls nearly to normal, to normal, or even to subnormal. The fall is most often accompanied by sweating. This cycle is repeated over and over, there being no specific time interval between the cycles. It is the usual septic, or 'spiking' temperature.

The sensorium remains clear except that the patient may mutter and mumble, especially during sleep. This is due to the fever. There is almost invariably no severe headache and, usually, none at all. When headache is present it is apt to be about the operative site. If severe it suggests the presence of a complication (see differential diagnosis). The patient does not look as ill as the temperature would lead one to expect; he may even insist he feels well enough to

be about. (This finding is particularly characteristic of bacteremia).

Blood culture is usually, but by no means always, negative.

Involvement of the jugular vein may result in damage to the three cranial nerves leaving the skull through the jugular foramen (ninth, tenth, and eleventh). This is known as Avelli's syndrome and is manifested by anesthesia of the pharynx and posterior third of the tongue, paralysis of the laryngeal muscles, and unusual prominence of the medial border of the scapula due to paresis of the trapezius muscle.

Papilledema may or may not be present; it is rarely marked.

It is a fact that obstructing the jugular veins by pressure (or otherwise) increases the spinal fluid pressure. Unilateral jugular (or lateral sinus) thrombosis of course obstructs the flow of blood through that jugular vein. If, therefore, pressure is made over the normal jugular vein during the manometric reading of spinal fluid pressure the pressure reading will rise if the opposite vein is obstructed by a thrombus. The reading returns to the previous level with the removal of the pressure over the unaffected jugular. This is known as the Ayer-Tobey sign and is of considerable importance especially if encountered early (before venous compensation has developed about the thrombosed jugular).

The spinal fluid is normal. There is usually no vomiting, no involvement of ocular nerves or muscles, no nystagmus, no vertigo, no signs of increased intracranial pressure, no symptoms of meningeal irritation, and no abnormal reflexes. As a matter of fact it is sometimes difficult to convince oneself that the patient has any such serious ailment as lateral sinus thrombosis.

The pulse rate rises and falls with the temperature variations.

The leukocyte count usually ranges between ten and twenty five thousand with polymorphonuclears predominating. Mild albuminuria is frequent. Glycosuria without hyperglycemia may be encountered.

Diagnosis.—The history of a middle ear infection, especially mastoiditis or a mastoidectomy, is most important. A longer or shorter time after the above infection or operation there occurs a sudden rise of temperature, usually to 104 degrees or higher, which may have been preceded by a chill. After a few hours the temperature is found in the neighborhood of normal, the fall usually being accompanied by sweating. This cycle is repeated indefinitely.

This should at once stimulate a complete physical examination including blood, spinal fluid, urine, and eyes. A surprisingly negative result is characteristic. Usually the leukocytosis, possibly a positive blood culture, and the Ayer-Tobey sign are the extent of the positive findings.

On top of this, the patient looks well.

Differential Diagnosis.—The three conditions always demanding differentiation when either is present are (1) lateral sinus thrombosis, (2) meningitis, and (3) brain abscess.

For lateral sinus thrombosis see 'Diagnosis' above.

The usual frank case of 'otitic' meningitis presents a persistently high temperature, rapid pulse, agonizing headache, often accompanied by crying out, and a mixture of restlessness and sleeplessness, excitableness and irritableness. Delirium or coma are frequent. The pupils are often unequal and, rarely, there is papilledema, nystagmus, and dizziness. Suboccipital and spinal tenderness, Brudzinsky's and Kernig's signs, and stiff neck are usual. Any of the twelve cranial nerves, especially the third through the eighth, may become involved. The spinal fluid is cloudy, contains markedly increased cells, is under increased pressure, the sugar reduction is diminished, etc.

The symptoms of brain abscess may be divided roughly into those due to suppuration of brain tissue and those due to pressure on brain tissues.

Suppuration causes an initial chill which may be very mild and which usually does not recur; persistently recurrent, associated, headache and vomiting; a temperature varying from slightly above normal to normal or subnormal; more or less dizziness; 'indifferent' facies; and a rather rapid loss of weight.

Pressure causes bradycardia, stupor, slight papilledema. In addition, cerebral pressure (cerebral abscess) causes hemianopic indentation of the visual fields, aphasia, and contrala-

teral, slowly progressive, paralysis of the face, arm, and leg.

In contrast to the cerebral pressure symptoms above, cerebellar pressure (cerebellar abscess) produces spontaneous nystagmus to the affected side (towards the bad ear); homolateral paresis of face, arm, and leg; a variable leukocytosis (?).

X-ray examinations (encephalography, etc.) may be of aid in determining the presence of a brain abscess.

There are other conditions that may at times have to be differentiated. For instance, one might manifest a malarial attack by the usual chill, fever, sweating and fall of temperature to normal. Further, this might occur during the course of a chronically discharging ear. The occurrence of the chill, etc., only on alternate days, the presence of headache, finding malarial plasmodia in the blood, the usually sub-normal white blood count, and the response to quinine, plasmochin, or atabrine are sufficiently diagnostic. Even in malignant malaria there should be enough of the above indications present to be diagnostic.

Many other diseases might prove confusing in some cases. Application of the teaching of general medicine then has to be relied on, as with malaria above. However, there is one practically constant finding that helps one to detect a guilty ear and sinus as the cause of the chill and fever: in a discharging ear any intracranial complication is preceded by an exacerbation of the pain, which may have been entirely absent for some time. The exacerbation may be so mild as to almost escape notice but it is almost invariably contained in a careful history. Frequently, too, the aural discharge diminishes shortly before the onset of the complication (during the exacerbation).

Complications.—Meningitis and brain abscess are themselves frequent complications of lateral sinus thrombosis. Bacteremia is fairly frequent —may be even considered a sign. Infectious arthritis, especially of the sterno-clavicular articulation, occurs often. Abscess formation anywhere, particularly of the hip, knee, or shoulder, is at times encountered as is also pneumonia.

The following findings, most of which parallel the above statements, were compiled by the author from the eighteen cases available to him.

One hundred per cent gave a history of middle ear infection. The length of time this had been present varied from four days to twenty years. The average was 3.08 months.

A mastoidectomy had been done shortly before in 94 per cent of the cases. And 17 per cent of the cases were detected at the operation on the mastoid. Of the post-mastoidectomy cases, the average number of days intervening between this operation and the detection of the sinus thrombosis (usually at a scondary operation) was 9.4 days. The maximum was 32 days.

As to the symptomatology of these eighteen cases each individual symptom is presented briefly below.

Chills: 50 per cent had one or more, all preceding the rise of temperature; in the other 50 per cent of the cases, while true that no chill was recorded, a slight chill could have been not noted.

Fever: 94 per cent had a striking temperature; 6 per cent had practically no fever.

Sweats: the fall in temperature was accompained by sweating in 50 per cent of the cases; as with chills, in the other 50 per cent the most that can be concluded is that sweating was not mentioned.

Pulse: The pulse paralleled the temperature in 89 per cent of the cases; comparative bradycardia was present in 11 per cent.

Headache: 56 per cent of the cases complained of headache. This is at definite variance with what one would expect until the fact is mentioned that in none of these cases was headache severe and, when present, it was chiefly complained of as soreness or slight pain about the operative site; 44 per cent did not complain of headache at all.

Appearance: 80 per cent of the cases looked perfectly normal grossly (facies, etc.); 20 per cent were irritable, restless, sleepless, or easily excited. In some of these cases a combination of the above was present.

Sensorium: the mind was clear in 77 per cent of these cases; it was cloudy at times in 23 per cent. The cause of this in these cases is not clear—high fever? threatened complications? Nervous system: 80 per cent were normal

throughout—pupils, cranial nerves, reflexes, etc.; 20 per cent were abnormal. The abnormal findings below are from this 20 per cent.

Pupils: 89 per cent of cases normal, 11 per cent abnormal.

Nystagmus: 89 per cent none, 11 per cent more or less.

Vertigo: 94 per cent of cases none, 6 per cent some.

Brudzinsky: 100 per cent of the cases showed negative.

Kernig: 94 per cent of cases negative, 6 per cent positive.

Stiff neck: 94 per cent of the cases showed none, 6 per cent some.

Papilledema: 86 per cent showed none; in 16 per cent it was present but mild.

Coma: this was absent in 100 per cent of the cases.

Delirium: this was absent in 94 per cent of the cases and present in 6 per cent.

No explanation is offered by the author for the findings above that one would not expect to find except to remind the reader that no pathological condition is cut, dried, and invariable (one may have typhoid fever almost without fever, for instance) and that some undetected complication might have been responsible.

Spinal fluid: There are records of spinal punctures on only nine of the cases. This was normal in 55% of the cases; abnormal in 45 per cent. The fluid was not especially abnormal (as in meningitis) in any of these cases. The cell count varied from 10 to 900. Otherwise the fluid was normal.

Blood count: the average was 13,500 leukocytes, 75 per cent polymorphs; the highest was 24,000 leukocytes, 93 per cent polymorphs; the low was 7,000 leukocytes, 73 per cent polymorphs.

Blood cultures: In 60 per cent of the cases this was positive, almost always for staphylococci or streptococci; 40 per cent of the cases were negative. Most cases were cultured several times.

Glycosuria: this was absent in 100 per cent of the cases, even after repeated tests.

The complications developed by these cases consisted of bacteremia (if considered a complication), peri-nephric abscess; osteomyelitis of the temporal bone, bronchopneumonia, lobar pneumonia, brain abscess, cellulitis of the neck (at site of jugular ligation), and arthritis of the wrist, knee, and sterno-clavicular articulation.

In the only case in which the Ayer-Tobey sign was recorded as sought for it was positive.

As to the treatment of these cases, all were treated surgically (see below): 72 per cent recovered, 28 per cent died.

The average time that those who recovered remained in the hospital after operation for the thrombosis was 33 days; of those who died the average time between operation and death was 14 days, the maximum 27 days.

Three surgical procedures were followed, i.e., (1) jugular ligation, (2) jugular ligation with sinus drainage, and (3) removal of the clot with subsequent pressure to control any hemorrhage.

In addition, 13 of the patients had a total of 52 blood transfusions, an average of 4 each; five cases had no transfusion.

A few comments relative to these case histories are in order. In the first place the information obtained from them is only of comparative value: the series is too small to warrant definite conclusions. The information is of interest particularly as it compares favorably with or contradicts the findings in other series of cases.

Further, there were probably many cases of lateral sinus thrombosis in this hospital that recovered without operation, or even without treatment other than bed rest—some possibly not even recognized. It is evident that surgical interference is not, from this paper, demanded by a diagnosis of lateral sinus thrombosis.

Two definite conclusions, however, do seem in order. First, cases of lateral sinus thrombosis may present a variable clinical picture. Second, modern surgical interference combined with multiple transfusions results in a preponderance of cures.

Treatment.—This question will not be discussed as it is of interest almost wholly to the specialist, to whom these cases should be sent.

Summary.—Lateral sinus thrombosis is usually secondary to disease of the middle ear. The literature in general is rather confusing as to the usual symptomatology of the condition. This

should not be, particularly as the usual cases present consistently a set group of findings. The differential diagnosis is rather easy and clear cut.

Conclusion.—The general practitioner should familiarize himself with this condition. It is fairly frequent and, usually, amenable to proper treatment. The treatment should be left to the otologist.

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SOME PHYSIOLOGICAL FACTORS IN THE PRODUCTION OF THE ALLERGIC STATE, OR WHY ASTHMA

By

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Consideration of asthma, not as a disease entity but, as a symptom(1) of a systemic disturbance of fundamental biological perversion with diverse manifestations, materially facilitates its management. This disturbance, we term the allergic state, following the term allergy, introduced by Von Pirquet(2), which is defined as altered reactivity. The two important implications immediately appearing are, first, a reacting substance must attain contact with the reacting organism, the human body and, secondly, that organism must be so modified in one or several ways to produce a reaction out of all proportion to that occurring after contact of the normal or non allergic individual with this same substance. This latter will serve also as a satisfactory working definition of the hypersusceptible state.

A complete understanding of this modification of the individual would serve to make the control of allergic disease easy and tremendously enhance our knowledge of immunity. Of this much we are fairly certain, allergy in the human and its counterpart anaphylaxis in the animal are part and parcel of the process of immunity and these two untoward phenomena are "accidents in the course of defense"(3).

If a guinea pig receives an injection of horse serum followed by daily injections for the next four or five days nothing happens. However, if an interval of ten days is allowed to elapse after the first injection before a second is given, anaphylaxis, usually fatal will occur. The dominant pathological finding will be an inflated condition of the lungs due to a contraction "peripheral in origin of the smooth muscles of the bronchioles"(3). Other changes to be noted are "a fall in blood pressure, a lowered coagulability of the blood and a leucopenia"(3).

There is convincing evidence to show that the first effect of the foreign substance or antigen (horse serum) is to cause the elaboration of a substance, antibody, within the tissue cells of the animal. Antibody production increases until at the end of ten days, it is sufficient in amount, both in tissue cells and serum, to combine at the former site with the antigen, reintroduced by the second injection of horse serum, to produce the train of physiological alterations resulting in the animal's death.

At this juncture I wish briefly to mention two fundamental experiments which tend to confirm the presence of antibody both in tissue cells and serum. In the Dale experiment(4), a guinea pig is first sensitized to a specific antigen, the animal is killed, the uterus is perfused thoroughly to remove all traces of blood and serum, and is then suspended in Ringer's solution with customary provision being made to record contractions. Addition of the specific antigen causes contractions of the uterus indicating that antibody was present in the tissue cells themselves. In the Prausnitz-Kustner reaction (5) the serum of a sensitive person is introduced into the skin of a normal individual. After a matter of minutes, introduction into this area of the specific substance to which the first person was sensitive causes a typically positive reaction indicating that antibodies were transferred in the serum. However, even though antibody is present both in tissues and blood serum the weight of evidence indicates

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that all important antigen-antibody reaction takes place within the sensitized cells.

Meltzer in 1910(6) pointed out similarities in the lungs of human asthmatics and of guinea pigs dead of anaphylactic shock, with the result that for a time the two processes were thought identical but it has since been learned that in the human there are numerous discrepancies, with the result that the hypersensitive state has been found to be far broader. Such a state can be produced in a variety of ways in a manner excluding a simple antigen-antibody reaction with the result the term anaphylaxis is restricted by many investigators to "antigen-antibody reactions as seen in experimental animals" and allergy is used broadly in the human to include "anaphylaxis and other altered reactions such as serum disease and drug idiosyncrasies"(3).

The end result however appears due to the same fundamental mechanism, whether asthma, hay fever, urticaria or some other manifestation occurs. Most important of all, there is an alteration of smooth muscle physiology and secondly there is a disturbance in the capillaries. It seems likely that all the various symptoms can be explained by these two fundamental changes.

As we all know, the symptom, asthma, consists essentially of difficulty in forcing the air out of the lungs due to spasm of the smooth muscle surrounding the bronchioles, particularly the terminal or respiratory bronchioles. There is usually an associated excessive secretion of mucus by the bronchial glands, which may be more pronounced after the attack has begun to subside, probably due to the fact that the mucous glands lie outside the muscle layer, which having been in spasm, constricted their ducts. It appears furthermore, that these phenomena are due to vagal stimulation at the nerve endings in the bronchioles and glands.

This event occurs in one of two ways, by reflex vagal nerve stimulation or by direct stimulation of the vagal endings by some substance present in the blood of that immediate area. As to the origin of this substance there is rather general agreement, namely that in some unknown way it results from the antigen-antibody union above described. As to its nature there is less concurrence of opinion. Of the various theories, it seems to me, the belief that the substance is closely related to or identical with histamine, carries most justification. I shall discuss the histamine theory in more detail later.

Consideration of reflex vagal stimulation necessitates a brief description of the asthmagenic area of the nose. "This area begins with the lower margin of the middle turbinal and includes all of the upper air passage extending from this margin to the cribriform plate both the lateral and septal surfaces of the nose being included. It is bounded in front by the anterior end of the middle turbinal and extends posteriorly to the sphenoid body and may include the sphenoid cavity. Laterally it extends from the septum to the lateral plate of the ethmoid."(3)

Stimulation of this area mechanically or otherwise leads to bronchospasm through the nasopulmonary reflex inasmuch as this area is supplied by the ophthalmic and maxillary divisions of the fifth nerve whose descending root ends about the cells of the nucleus ambiguous which represents the motor root of the vagus and glossopharyngeal nerves.

This leads to an important point in the treatment of asthma. A very careful distinction must be made between primary inflammatory conditions of the nose and its accessory structures and secondary allergic changes to clarify the indications for operative measures. In respiratory allergy as a whole, changes occur in the mucous membrane of the nose and accessory sinuses as well as the lungs, which though often considered due to primary inflammatory processes, are actually merely secondary manifestations of the underlying allergic disease. To inspection, turbinates may appear to be greatly swollen and sinuses cloudy to transillumination and x-ray with complete disappearances of these phenomena when the asthmatic attack ceases. In such conditions their nature will be clear if one remembers that such swollen mucous membranes are moist, translucent, edematous and pale. Operation in such a case, will obviously not be of help and will so impair the mucous membrane to render it more susceptible to subsequent onslaught by the exciting agent. However, such frank mechanical irritants as ethmoidal polyps and high septal spurs are treated

operatively with justification and the patient is improved.

The greater proportion of cases probably results from direct stimulation of the vagal nerve endings in the lungs by a chemical substance, probably as indicated above, closely related to histamine.

Injection of histamine intracutaneously causes a large wheal and a surrounding area of erythema due to an increase in capillary permeability with the passage of fluid into the tissues, and capillary dilatation. It is probable that relaxation of the arterioles occurs also. Systemically it causes a fall in blood pressure and bronchial constriction with associated subjective symptoms of faintness, giddiness and difficult respiration. Histidine, an amino-acid present in all tissue cells, especially those of various mucous membranes, is easily converted into histamine by the removal of carbon dioxide atom from the molecule of the former. It seems probable that a substance, the "H" substance of Lewis(7), with identical actions as histamine is produced in the various allergic conditions and histidine is one possible source.

There is a difference of opinion as to the susceptibility of allergic and non allergic people to histamine. Observations made in the course of gastric analyses in which histamine is employed would indicate a difference in the reactions of various people but they do not necessarily fall into clear cut allergic and non allergic groups. In general, it seems that histamine, if formed in the course of allergic disease, exerts its effect predominantly on those tissues in the immediate vicinity of its site of formation and that the antigen-antibody reaction in asthma takes place within the lung itself.

So far we have been concerned with some of the underlying mechanisms in the production of allergic symptoms, especially, asthma. Of more clinical interest is a consideration of why people have asthma. There are three fundamental requirements. A person first of all must have the capacity to become sensitized, secondly, he must become sensitized by contact with a sensitizing agent, and thirdly, after the induction of this state further contact with the sensitizing agent is necessary for the production of symptoms.

This capacity to become sensitized, we call, the allergic background, the soil in which the seeds of allergic diseases must be sown to thrive. And chiefly in this respect is allergy in the human different from anaphylaxis in the guinea pig. This species can be sensitized to horse serum in essentially 100 per cent of cases while only about 1 per cent of humans have the capacity to become sensitized at all to any substance(1).

Without doubt the factor producing this background, of far more importance than all others, is heredity. In Bray's series of 200 cases of asthma in children there was a unilateral family history of allergy that is either in the mother's or father's side of the family, in 51.5 per cent of cases and a bilateral history, in 17 per cent of cases. In only 31.5 per cent of cases was there no positive family history. Even more striking was the fact that of the unilateral cases transmission of 64 per cent occurred through the mother's side while only 36 per cent through the father's(3). Just what is transmitted is difficult to say at present but essentially it is the tendency to hypersensitiveness. Transmission through the father obviously must take place through the germ plasm. Though active sensitization of the fetus in utero may occasionally occur(8) and passive sensitization, rarely, by the transmission through the placenta of antibodies preformed in the mother, it is likely in the vast majority of cases that transmission through the mother occurs essentially in the same manner as in the father.

Given the allergic background contact with a specific sensitizing agent must occur. This factor follows the rules of common sense. Poultry raisers become sensitized to feathers, stock raisers and horsemen to horse dander and other animal emanations, horticulturists to plant pollens, babies to milk and egg. Such an associative list could be continued indefinitely. More intriguing is the fact that, following routine skin tests, frank sensitivities, though probably not important in the production of symptoms at the time, are found, yet after careful questioning only a casual opportunity, or perhaps none at all, for contact with the sensitizing agent seems to have occurred. This would indicate that though prolonged exposure to a given agent is

more likely to produce specific sensitivity to it the same situation may be accomplished by the briefest contact. An important corollary immediately appears with reference to the treatment of asthma, namely, the skin tests must be closely correlated with the environmental history and our greatest energies directed toward the removal of, and the desensitization to, those substances in the patient's sensitivity pattern where contact is most likely.

The patient who presents himself to us for treatment has already fulfilled all three primary qualifications and our problem resolves itself in to the identification of the sensitivity, and preferably if at all possible, the prevention of further contact and general treatment of the patient to restore the normal equilibrium of his smooth muscle and bronchial glands. These two goals failing achievement, we are then forced to fall back on an effort to neutralize specifically the existing sensitivity. This process we term desensitization.

However, time does not permit discussion of sensitivity tests, desensitization procedures, and the technique of treatment in general. I have merely tried to present what to me has been a helpful concept in trying to understand a difficult disease, the allergic state, and its most distressing symptom, asthma.

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AN OUTLINE OF THE HISTORY OF ORTHOPEDIC SURGERY

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To write a complete history of the development of orthopedic surgery would be a tremendous task. To sketch briefly this development in a limited space of time is difficult, and many important phases must necessarily be omitted. It is with the hope that some of the more important developments can be traced that this paper is attempted.

The origin of bone and joint surgery is almost as antique as our knowledge of the human race. Hundreds of skeletons which have been unearthed from the burial grounds of the prehistoric men of Europe, Asia, and Northern Africa show all grades of bone pathology and injury. For example, there is a large osteochondroma on the femur of the original Java Man, Pithecanthropus erectus. In the original Neanderthal skeleton the ulna shows a fracture which has united in good position. There was, of course, no attempt at bone surgery as we know it today. When there was an acute infection of bone such as osteomyelitis, the disease either ran a self-limited course or ended fatally. Paleolithic man probably acted as other high-grade animals and treated his fractures instinctively. By judicious rest with possibly some form of support, followed by cautious return to motion, no doubt some very excellent results were accomplished.

At some time during the course of neolithic development knives and saws were invented and the first evidence of amputated stumps were found. These operations were formidable but not necessarily fatal. In the caves of La Tene, in France, many illustrations of figures with amputated fingers have been found. There being no apparent pathological reason, it is thought by some that the operation was done in obedience to some religious custom.

Another commonly practiced surgical proceedure was trepination. It is apparently the earliest of all bone operations and was universally practiced. Trephined skulls have been found not only in Old World deposits but also in the graves of pre-Columbian America. Sharpened stones were used to make the opening in the bone, and even in spite of absolute ignorance of asepsis, many of the patients recovered. It has been generally believed that these frequently done operations were performed at the insistence of the medicine man or witch-doctor to give vent to the evil spirits which were disturbing the patient. However, Hrd-

licka, the eminent anthropologist of the Smithsonian Institute, has recently demonstrated that in many instances trepination may have been done in cases of head injuries with fracture of the skull to relieve the development of paralysis and coma.

A study of the decorative pottery used by our early progenitors throws valuable light on man's further progress in civilization. Many of the larger urns and mural decorations carry illustrations of the types of people in the community. Hunchbacks, dwarfs and other forms of cripples are represented.

Following the introduction of the art of embalming in the era of pre-dynastic Egypt much more interesting material was brought to light. G. Elliot Smith and his co-workers in archeology in the Nubian Desert uncovered mummies of the Fifth Dynasty (2750-2626 B.C.). Some of these bodies had fractured limbs still bound in splints which were evidently very ingenious and effective. It is doubtful whether tuberculosis existed in Early Egypt, but Ruffer describes an unquestionable case of Potts disease with psoas abscess in a mummy of the twenty first dynasty (1000 years B.C.). However, the various forms of arthritis were extremely common, and the spa, which is one of the oldest of all therapeutic institutions, thrived on the treatment of these chronic joint cases. There is very little evidence of any attempt being made to treat the congenitally deformed since the virtue of society during the incumbency of the Pharoahs called for extermination of these unfortunates.

Early Egyptian methods are important chiefly in that they formed the matrix from which, through Minoan and Aegean channels, the remarkable cultural achievements of Greece later developed. Grecian surgery began just preceding the age in which Homer lived. The opportunities which was afforded gave tremendous impetus to medical and surgical development. The Greco-Roman temples became centers of medical service, and, although the practice was primarily religious, it used the best medical science at its disposal. The great establishments at Cos and Epidauros cared for the crippled, deformed and disabled, and became the patterns after which Christianity in later centuries modelled its hospitals.

The earliest truly scientific treatise on medicine was that remarkable series of volumes ascribed to the physician for whom they were named and known as the Corpus Hippocrates. The exact dates of the existence of Hippocrates are not known, but it has been determined that these most important of all Greek texts appeared at sometime between the 4th and 1st centuries B.C. Some of his books are especially applicable to orthopedic surgery and should be read by everyone interested in this specialty. Almost all of the basic principles underlying the practice of orthopedics can be found in his books, "On Fractures," "On the Articulations," and "The Surgery." Much of the material which has been presented as modern and original in comparatively recent years was forgotten by the world for centuries and can be found in the Corpus Hippocrates.

Even though it was the custom among early Greeks to destroy infants with congenital defects and deformities, Hippocrates describes spinal curvature, club foot and congenital dislocation of the hip. He recommended gymnastic exercises, heat and massage, bandaging and splinting, and the use of machines, but it is not recorded that he had recourse to surgery. Artificial limbs, braces, splints and club foot corrective shoes were used, but probably the most famous apparatus devised by Hippocrates was his Scamnion. This was an ingenious but crude type of fracture table with windlasses on which traction could be applied for the reduction of fractures and dislocations. Its use continued for centuries.

In spite of the fact that many creditable methods were in use at this time, certain interesting and curious practices were maintained by isolated nomadic tribes. A few of their methods warrant reciting. A patient with a dislocated hip was kept in a darkened room for three full days. He was sweated by the constant burning of fires. No food was allowed but the sweating was enhanced by copious drafts of warm rice water. During this same time a bullock or buffalo was confined and fed only on chopped straw and salt, no water being allowed. At the end of the three-day period the patient was placed

astride the animal and his ankles securely fastened together with cords under its abdomen. The animal was then led to water and allowed to "drink until its belly swells to about double that of its former size." This distention either "brings the wandering bone back to its socket or produces more serious results likely to render the victim a helpless cripple for life."

To reduce a dislocated shoulder an empty goatskin was placed between the flexed elbow and chest, the corresponding hand being securely fastened to the opposite shoulder. The goatskin was now slowly filled with water until it weighed 100 pounds or more. The weight and increase in size of the bag overcame resistance and either "betterment or farther injury resulted."

A dislocated ankle was treated by burying the foot in a hole dug in the ground. After being firmly fixed by packing earth securely about it the limb was then forcibly pulled outward "with a fair chance of the joint returning to its normal position."

Some of the Hippocratic methods may be briefly mentioned as follows: The principle of continued traction to overcome muscular pull in fractures of the long bones was well understood. Judicious padding of splints to prevent pressure sores over bony prominences was taught. Fractures of the clavicle were known to heal readily, and tardy or nonunion was recognized in other locations. They did not comprehend the circulation of the blood as described by Harvey 1500 years later, but they knew that a constricting bandage produced venous stasis and favorably influenced delayed union. Bier, within our own memory, has so popularized this principle that it is widely known as his method of venous stasis, when in reality its origin dates back to the author of "On Fractures." Their methods of reducing shoulder dislocation by traction and counter traction in the axilla are classical. Recurrent shoulder dislocations were treated by application of the actual cautery to the inferior capsule, deep in the axilla. The scar tissue contraction following cauterization accomplished the same results as some of our modern operations. Hip dislocations were reduced by straight manual traction, except extreme cases which were either hung by their legs from an overhead beam or treated in the famous Scamnus Hippocrates. Overcorrection of club foot was known to be essential. Spinal deformities were treated with extension on a flat surface and prolonged recumbency on a hard mattress. Considerable force was frequently used in attempts to correct kyphosis, though it was commonly known to be ineffective. They understood the late kyphosis which develops after fractures of the spine. Along with these active measures, the value of proper diet and hygienic measures were stressed.

Aside from the many splendid methods of fracture treatment it is surprising to note the very modern conception of motion and rest which guided the Hippocratic surgeons. These methods, after the time of Galen, were mostly forgotten by the world until the 18th century. A sentence from the book, "On Surgery," concerning fractures in general deserves quotation: "It should be kept in mind that exercise strengthens and inactivity wastes!" That one simple statement contains all of the fundamentals developed in our elaborate physiological knowledge of the atrophy of disuse. Early mobilization of fractures was one of the many principles recognized by the ancients, ignored for ages and even today by many surgeons it is frequently not understood. In general, it can be said that Hippocratic orthopedics contained within itself practically all of the elements of modern technic, other than the operative.

The history of orthopedic surgery from the time of Hippocrates until the eleventh century can be rapidly summarized. Except for a few notable characters, it was practically barren. Celsus advocated gymnastics, active and passive motion, soon after the beginning of the Christian Era. Ephesius described the deformities later designated as "rickets" by Glisson. Galen, who lived from 131-120 A.D., was a truly remarkable Roman physician who made many valuable contributions to anatomy, physiology, embryology, and neuroanatomy. He coined the words "lordosis," "kyphosis," and "scoliosis." He knew that blood was contained in the arteries and veins. He understood and used the term "anastamosis of the capilliaries," and all but preceeded Harvey in his discovery of the circulation. Aurelianus, in the second cen-

tury, described the treatment of paralysis, and Antyllus, one hundred years later, advocated tenotomy for ankylosed joints. Paul of Aegina (625-690 A.D.) wrote extensively and left a profound influence for succeeding centuries. He was much nearer to Hippocrates in method and attitude than any of his contemporaries. Following Paul came the Arabians and for several centuries southern Europe was dominated by Mohammedan culture. The Mohammedans were antipathetic to the cutting of the human body, alive or dead, and this fact militated against the development of surgery in the Middle Ages. Rhazes (861-932), Haly ben Abbos (994), Avicenna (980-1037), and Isaac Judaeus (885-955) were the outstanding figures of this period, but they were physicians rather than surgeons.

The cultural complexion began to change in the 11th century. The university at Salerno was established. Its faculty was composed of the best available talent, and students came from all parts of Europe. Soon after this, the great teaching centers in Paris, Bologna, Oxford, Montpellier, Padua and Naples were founded.

From this period on, it would be impossible to mention all of the various outstanding men of surgery. The names of Saliceto, Guy de Chauliac, Leonardo da Vinci, Ambroise Pare, Fabrizio and Coiter will always be famous. Their work was aided by the eminent anatomists of that period—Versolina, Fallopius, Servitus, and Eustachius. There was considerable conflict with the barber-surgeons, but in addition to various types of corsets, braces, poultices, salves, etc., the surgeons used many cutting operations. Nerve, muscle, and bone operations were done, and the use of ligature was introduced to control hemorrhage in amputations.

The study of anatomy was carried on intensively and great strides were made in orthopedic understanding and practices. Ambroise Pare has frequently been given credit for being the father of orthopedics, yet the term "Orthopedia" was not invented until nearly two hundred years after his time. Nicholas Andre, professor of medicine at the University of Paris, gave the title "Orthopedia" to a treatise which he published in 1741. He synthesized the term from the Greek roots orthos (straight) and pais (child) to express his belief that the idiopathic deformities of adolescence and adult life were due to an imbalance of the muscular system in childhood. However, the real founder of orthopedic practice, that is, "the mechanical straightening of the crooked child," appears to be Venel, who in 1780 established in Switzerland the first orthopedic institute in the world. During the next two centuries tremendous advances were made in all surgical procedures, but cutting operations were entirely too hazardous to permit of their general usage.

The really revolutionary period which has led to modern surgical and orthopedic practices occurred within approximately the past half-century. The wonderful achievements in surgery which are now being universally and unhesitatingly practiced can be attributed almost entirely to four men whose names in medical history will forever be immortal—Virchow, Pasteur, Lister, and Roentgen. These men made the technic of the work possible, but Crawford Long, in our own Southland, first used ether anaesthesia which gave satisfaction, safety, and "comfort of soul" to the patient undergoing the operative procedure. Although Long was the first to use ether in operation, credit for its clinical use has been attributed by some to another man. Dr. Morten, a dentist who practiced in Boston, popularized the method.

Prior to this period, there were few men who confined their work entirely to orthopedics, and it can be said without disrespect that they were generally speaking a group of dignified "harness makers." The correction of crippling deformities and diseases was a prolonged, tedious and frequently painful procedure. Corrective apparatus was the vogue and these appliances were worn for months or years by the poor patients. The nearer to being a mechanical genius was an orthopedist, the greater was his reputation and practice. Frequently all of the operative work was done by the general surgeon and the orthopedist was called upon to devise an apparatus much as the modern brace maker is used by the orthopedist of today. How conditions have changed with the advent of Listerism and asepsis!

No sketch of the development of orthopedic

surgery would be complete without the inclusion of its most prominent figure of the past century —Sir Robert Jones of England. This world famous character was the apprentice and nephew of the great Hugh Owen Thomas, who, in turn, with his four brothers, had assisted his eminent father in orthopedic surgery. "Our profession," says Moynihan, "has rarely produced a mind so original and independent as that of Thomas." He knew little of pathology, but of the changed appearance and function of morbid bones and joints and of the means other than open operation to be used to aid nature in its effort toward restoration, no man ever knew so much. He was a veritable mechanical genius and enjoyed a tremendous practice. Orthopedic surgery was, to Owen Thomas, sometimes a matter of enforcing rest, sometimes of fitting corrective or supportive appliances, sometimes of manipulations, and sometimes a wise combination of the three. All of this knowledge and experience was inherited by Sir Robert Jones, to which he added the practice of surgical methods which Lister had made possible. As an operator and as originator of surgical procedures for the care of orthopedic cases, he was among the greatest who have ever lived. Shortly after the beginning of the World War it became evident that in order to care for the wounded and crippled soldiers there would be a great demand for men trained in orthopedics. At the head of the orthopedic office of the war department was appointed Sir Robert Jones. Under his guide, counsel, and example a large number of skilled workers were soon taught to assume these important positions. The genius of Owen Thomas and the skill of Sir Robert Jones found their highest expression in the care of our wounded. The methods of these two now became common knowledge and the heritage the world over for all of those who sought to enjoy them. Moynihan says, "In the practice of Orthopedic surgery the spirit of Sir Robert Jones will live forever."

Following the tremendous experience which the war afforded, orthopedic surgery rightfully assumed its position as one of our most important specialties. Even after the advent of asepsis many surgeons were reluctant to invade osseous and joint structures, but war time experience had proven that these operations were not only possible but that they could be done with safety. Within the past twenty to forty years perhaps more has been accomplished for orthopedics than in all of its previous history. It has found its proper place in the medical curriculum and special postgraduate courses are being taught. Various institutions have been erected throughout the world for the especial study and care of orthopedic cases. Volumes of research work have been published and more is known about the chemical, physiological and pathological changes which take place in diseases, injuries, and abnormalities of the osseous system than ever before. Guinea-pig inoculation tests, biopsy tests, serological, histological and bacteriological studies have become more valuable. The x-ray not only makes the diagnosis of many bone diseases possible but it is indispensible in the treatment of fractures and certain other osseous lesions. The public is aware of this fact now and frequently the roengenologist is the first to be consulted by the patient. Electrodiagnostic apparatus have been devised and the moving picture is freely used for teaching purposes and for demonstrations. Various measures for physiotherapy, hydrotherapy, chemotherapy, phototherapy and electrotherapy have come into use. Heliotherapy in the care of tuberculous bones and joints has reached a high degree of perfection as in the Rollier Institute at Leysin, Switzerland. However, the surgical fusion of these joints by intra and extra articular fixation has become more and more popular. The credit for introducing bone graft surgery rightfully goes to Dr. Fred Albee of this country. With modern methods of aseptic technic and preparation before operation these cases may be undertaken with impunity. Months or years of recumbency in the treatment of tuberculous joints have been shortened by fusion operations. Tuberculosis of the spine is treated with the tibial bone graft of Albee or the Hibbs type of multiple osteogenic bone chip operation. Various modifications of these two procedures have been introduced. Bone grafts may be inlay, onlay, intramedullary, or osteoperiosteal. Pegging and mortising procedures are numerous and as ingenious as the cabinet making skill of the individual surgeon

permits. Someone has facetiously remarked that there are two kinds of surgeons—carpenters and plumbers. The orthopedist, as a carpenter-surgeon, is aided greatly by the many new instruments and tools which have been developed. There are various chisels, gauges, hooks, screws, plates, clamps, pins, etc., but the electric motor with its sterilizable shell and various attachments is of particular importance in doing good bone surgery. The use of various metallic appliances for the internal fixation of fractures has largely been discarded. Stainless steel for removable fixation or for temporary traction appliances has recently been introduced and is used with great satisfaction. Boiled beef bone, ivory and celluloid pegs and plates are available, but are not considered as satisfactory as autogenous bone grafts. The treatment of scoliosis has improved greatly with newer corrective measures and with spinal fusion. Great progress has been made in relieving the sufferers of infantile paralysis. Tendon transplantations and joint stabilizing operations are fairly well standardized. Osteotomies to correct deformities are unhesitatingly done and bones may be either lengthened or shortened by operation. Spastic paralysis can be benefitted by appropriate nerve and tendon operations. Royle and Hunter in 1924 introduced the operation of sympathetic ganglionectomy for spastic cases. The increase in temperature of the operated extremity provoked a great deal of study of this new operative procedure. Now the operation is used rather extensively for the relief of many circulatory deficiency conditions with which the orthopedist comes in contact. The treatment of congenital dislocation of the hip has greatly improved with the advent of open reductions. Various hip joint reconstruction operations are now fearlessly performed with happy outcomes. Some of our medical forefathers would have been horror stricken at the thought of such procedures. Many other types of extensive bone and joint operations are being performed without hesitancy. Arthroplasty of joints is a standardized procedure. There is a considerable amount of tendon, nerve, and skin surgery which comes within the domain of orthopedics. Congenital deformities and those resulting from burns or other injuries can be greatly benefitted by modern methods. Orthopedic apparatus has been greatly simplified and braces are made out of a much lighter material. Splints are made of light aluminum which is permeable to x-rays. Traumatic surgery has made such great demands on the orthopedist that now fractures are referred to him directly and many insurance companies and large corporations make provision for his services to their injured. With the ever increasing accidents as the result of modern high speed machinery it is likely that soon traumatic surgery will be a distinct specialty. The handling of fracture cases has been made much easier with modern fracture tables, portable x-rays, improved plaster of paris technic and the new machines for reducing and maintaining the fractured part in position. Whereas, prior to the days of Lister, most of the patients with compound fractures died. Now it is rarely that one becomes infected and very seldom that amputation is necessary.

Many other examples could be cited to illustrate the tremendous strides orthopedic surgery has made in the past half-century. A few years ago it was practiced only in the large cities. Now both coasts and the interior of our country are richly supplied with splendid clinics, many of which have a well-deserved international reputation. Orthopedic surgery has developed from a very humble beginning and no longer is confined merely to the "straightening of the crooked child." Campbell, in his recent textbook, describes it as "that branch of general surgery which deals with diseases and injuries of the bones, joints, muscles, fascias, and nervous system which may impair function or cause deformity at any age of life." Every student preparing for the practice of orthopedics should realize the responsibilities of this specialty. He should be thoroughly versed in the fundamentals of medicine and, in addition, he should be well grounded through knowledge and practice of the basic principles of general surgery. The work is difficult and exacting but the field has only recently been opened and the opportunities for development and self-expression are numerous. Let us hope that with the passing of years orthopedic men will continue their harmonious relationship with medicine and sur-

gery in general and that they will justify the faith and confidence that has been placed in them.

Note: In preparing this paper it was necessary to copy certain data from the works of others. To these authors I wish gratefully to give due credit in the appended bibliography.

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MANAGEMENT OF CROSSED EYES IN CHILDREN

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Recent progress in the correction of crossed eyes has modernized our knowledge of the management of strabismus cases. Methods were offered for the correction of crossed eyes at least two hundred years ago, but very little progress had been made before fifty years ago. During the last ten years, the ophthalmologist has seen this type of work advance steadily. The experiences of our elders have shown their mistakes in correcting squints and have given us a better understanding of the causes of squints and the methods of correcting them.

Many parents seek the advice of physicians because their children have crossed eyes. Generally the parents consult the family doctor or the pediatrician first and for this reason they should know what can be done for crossed eyes and how to advise the parents. Frequently parents have refused the advice of glasses and treatment of the child's eyes in early life but come to the doctor again after the child starts to school. The teacher sends a note to the parents saying the child has crossed eyes or cannot see the blackboard and that they should see a physician. Too often the child with crossed eyes is shunned by the other children, is teased because of his defect and is even regarded as a mental cripple. One can now see how such a child easily gets behind in his studies. When the child starts to complain, the parents are ready to cooperate and they want the child to have a refraction and want him started on exercise. Every child is entitled to a correction of his refractive error and he is handicapped immediately when a needed correction is refused by the parents. Children should be refracted under a complete cycloplegia with atropine as the success of the refraction depends entirely upon the oculist. Subjective examination is valueless in young children.

Glasses should be worn constantly, when the error of refraction is found to be such that glasses are needed for its correction. The time to begin is early and we often put glasses on infants under one year of age and they wear them without any serious difficulty. Of course, binocular vision is not present at birth but is usually noticed about the fourth week of life. After this time, if a squint develops, we should examine the macula with the aid of the ophthalmoscope to be certain there is no pathology present. Every child should have binocular vision and when this is not present, the squinting eye must be stimulated in some way so as to restore binocular vision. Orthoptic training has been advised by a great number of oculists but its benefits have undoubtedly been exaggerated. Orthoptic training is of greater value when instituted before the age of six years, after this time the results are doubtful. In my experience, I find that the poor vision in a squinting eye can be greatly improved by wearing a patch over the fixing eye at regular intervals for several weeks and thus make him use the squinting eye. This is an old method and very simple and probably gives as good results as any. The best results are seen in squinting eyes with a

vision of at least 20/60 and there are the cases considered likely to respond to any treatment.

Loss of binocular vision and the power of fusion is due to an imperfect brain control. It is impossible to develop fusion in some children and an early operation is indicated here in order to aid the eyes in developing fusion before a definite squint has occurred. When the diagnosis of true alternating strabismus is made, the child should have an immediate operation as glasses seldom correct this condition. In an actual squint with a normal or practically normal refractive error, it would be useless to prescribe glasses and an operation should be advised for its correction. If an actual squint is not corrected early, the squinting eye rapidly loses its visual acuity and amblyopia exanopsia is developed. One is not justified in stating any definite age of the child is the time for operation. We have operated many cases as young as two and a half to three years of age and obtained excellent results.

We must be sure that the squint is not due to paralysis of nerve or muscle. If it is a paralytic case, we try to determine its cause and treat that. Operative correction is not advised until we are sure the paralysis will not recover. Some of the more common causes of paralytic squints are syphilis, birth injuries and intracranial complications.

Frequently an intermittent type of squint is seen. The mother states that the eyes are usually straight but occasionally one or both eyes appear crossed. The proper correction of the child's refractive error is usually all that is needed to prevent an actual squint from developing. Too often, parents are told to leave the children alone and they will outgrow the squint. This is true in some cases but when the tendency to squint is present, due to a weak muscle, any irritation from illness, injury or otherwise may make the squint actual. This type of case usually clears up when the irritation is removed but will certainly bear observation.

In conclusion, it is well said that in view of our present knowledge, there is no excuse for anyone to have crossed eyes. The earlier they are treated, the better the results will be. The management of crossed eyes is divided into three stages: (1.) Correction of any refractive error. (2.) Stimulating binocular single vision. (3.) Operation. Many cases are cured in the first stage and no case should undergo the last stage (operation), without passing through the first two. Consequently, if we want a permanent cure, we must place the eyes in their natural position, by operation, so as to aid in stimulating binocular single vision, when stimulation has failed before operation.

OCONEE COUNTY MEDICAL SOCIETY

Resolutions

WHEREAS, it has pleased Almighty God to remove from our midst our brother and coworker, Dr. Joseph S. Stribling, therefore, be it resolved:

FIRST, that the Oconee Medical Society feel a personal loss in his passing, and our appreciation of his useful life spent in the practice of our profession.

Dr. Stribling was graduated from Bellevue Hospital Medical College, New York in 1888 and began the practice of medicine at once in Seneca, associating himself with Dr. O. M. Doyle. He continued here with only a slight interruption to the day of his death, rounding out 48 years.

It could be truthfully said of him that he gave freely of his time and services—not only to those who could pay, but at times he actually spent himself to the point of exhaustion in serving those who could not pay.

In season and out of season, he was always ready to help his fellow-man.

Not only was he useful in his profession both to his fellow practitioners and to the public, but as a citizen, he had lofty ideals of justice and the right. His feet were firmly planted on these great foundation stones.

SECOND RESOLVED: that we extend to his bereaved family our sincere sympathy, and that a copy of these resolutions be spread upon the minutes and that a copy be sent to his family.

E. C. Doyle,
J. W. Bell,
W. A. Strickland.

CAT.

PRESIDENT'S PAGE

DEATH OF PRESIDENT SAMUEL E. HARMON

At the time of the election of Dr. Harmon to be President Elect of the South Carolina Medical Association the Journal published the following editorial.

"One of the foremost leaders in organized medicine in South Carolina was elevated from the Council to be President Elect at the Charleston meeting, May 1, 1934. Dr. Harmon early in his professional career became imbued with the unlimited possibilities of organized medicine as the means whereby the physician may not only promote his own interests but particularly render a larger service to his clientele and the community in which he lives. Dr. Harmon was born in Lexington County, South Carolina, in the Saluda River Valley which is now under water as a result of the Lake Murray development. The son of Frederick Harmon the Second and Elvena Seay, of German Irish parentage. Dr. Harmon attended the country schools in the vicinity of his birth and later the city schools of Columbia and Newberry College. In 1899 he graduated from the University of Tennessee Medical School, Nashville. Subsequent to his graduation he did a general practice for some ten years. During the period of his general practice he was preparing himself for general surgery by frequent visits to the great medical centers of this country and taking post graduate courses there, such as the Post Graduate Medical School and Hospital, New York. About twenty-five years ago Dr. Harmon limited his practice to general surgery.

At the Aiken meeting of the State Medical Association in 1918, Dr. Harmon was elected Councilor from his District and in 1923 was made Chairman of that body, a position which he has held with commanding fidelity until he was honored with the office of President Elect. It is not too much to say that Dr. Harmon has adorned his long connection with the Council with rare courage, optimistic vision, and constructive leadership. He will bring to the Presidency a year hence an experience in organized medicine of invaluable scope. This new honor, therefore, has come to one preeminently qualified from every standpoint."

The news of the sudden death of President Harmon during the Christmas holidays was received with genuine sorrow throughout the state. He had fulfilled in every particular the confidence of his many friends that his Presidency would be forever significant as a forceful administration of a leader whose knowledge and interest in organized medicine in South Carolina has been rarely equalled. Dr. Harmon was a militant supporter of organized medicine. He believed that in this way the profession had a mighty privilege of dynamic possibilities for good to the public and to the profession itself. Dr. Harmon was ready at all times, regardless of inconvenience to himself, to respond to the call of his fellow physicians anywhere in the State for any assistance within his power to render. He will be sorely missed in many circles of usefulness and honor in South Carolina. Upon assuming the office of President Dr. Harmon had well thought out plans for the meeting of the State Association in Greenville, April 21, 22, 23, 1936. It will be the purpose of the new President, Dr. R. C. Bruce of Greenville, and the various committees appointed by President Harmon to carry out these plans to the letter as far as posible.

Aside from his interests in South Carolina medicine Dr. Harmon was a Fellow of the American Medical Association, Fellow of the American College of Surgeons, and a member of the Southern Medical Association. He was a member of Ebenezer Lutheran church, and was active in the Masonic order, being affiliated with Acacia Lodge, Ancient Free Masons, and also with all higher bodies of the York rite, including Columbia commandery, No. 2 Knights Templars. He was also a member of Omar Temple, Ancient Arabic order, Nobles of the Mystic Shrine.

Editor.

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South Carolina Medical Association

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JANUARY, 1936

THE MEDICAL COLLEGE AND ITS NEEDS

For well over a hundred years South Carolina has been supplied with its physicians by the Medical College of the State of South Carolina. Nearly three fourths of its doctors in smaller towns and rural districts are graduates of the School.

In 1913 the State recognized the value of a Medical College as a source of supply of medical attention for its people, and the college became a state institution, a place where its native young men and women could find competent instruction in the art and science of medicine without the difficulty and added expense of attendance at distant schools.

The increased difficulty of entering the limited classes at medical schools in general makes a state school essential for supplying the medical needs of South Carolina. Yet for some years past the state has reduced the budget annually so that for a long time the college has been running on a shoe string—and a very frayed string at that. From $142,000 in 1930 the appropriation shrunk to $52,000 in 1933 and has expanded unwillingly to $80,000 in 1936. Meantime repairs, replacements, and new equipment wait on funds, such teachers as are paid remain well underpaid, and the college declines.

These things have been known with concern by Trustees and Faculty for many years. They have been known but overlooked by the legislature almost as long. Now the critical point is reached for a drastic change.

The Council on Medical Education and Hospitals of the American Medical Association has made a survey of the college, finds it lacking largely in respect to personnel, and makes very pertinent suggestions. Its report covers briefly the history and organization of the college. It notes that the maximum salary paid full time professors is $3,100. It describes the buildings as "old and poorly arranged." It remarks on various departments, concluding almost every summary with the statements that without a larger competent staff the department cannot do satisfactory work. It speaks of the "almost impossible load" in one department.

The final comments of the inspectors are that "the Dean of the School of Medicine is an unusually high type and competent Dean.

"There is an excellent spirit throughout the institution and a beautiful demonstration throughout the four years of the course of the highest ideals of the practice of medicine.

"The relationship of the school of medicine to Roper Hospital and its Out-patient Department offers unusual facilities for the development of a high grade of medical education.

. . . Adequate support must be supplied to provide such personnel as not already available.

"In general the preclinical departments are inadequately staffed.

"If this college is to meet satisfactory standards it would seem to be important (1) that the State of South Carolina provide adequate funds for the conduct of the College; (2) that the Preclinical Departments be adequately staffed with competent teachers . . . . "

The implication in the comments is that unless changes be made, the school must lose its rating as a Class A College. Any other class of Medical School is unthinkable for students and teachers. South Carolina must put up—or shut up its chief source of medical care for her people.

J.I.W.

NEWS ITEMS

The Maternity Institute held by Miss Anita Jones of the Maternity Centre New York, in Charleston Dec. 2-6 was excellently attended. This Institute was sponsored by the State Board of Health, The S. C. Public Health Association and the County and City Health Departments of Charleston. The Health Officers of the State attended one day. Miss Jones lectured to the Senior class of the Medical College and to the Senior class of Roper Hospital.

Welcoming talks were made by Dr. Jas. A. Hayne, State Health Officer, Dr. Ben F. Wyman, of the Department of Rural Sanitation, Dr. Leon Banov, Charleston Health Officer, Dr. L. O. Wilson of the Committee appointed by the State Medical Association to study the high maternal death rate in S. C. and Dr. Lesesne Smith, of the Maternal and Infant Hygiene Committee of the State Board of Health.

Renewed enthusiasm for the teaching of what constitutes adequate Maternity care, was a result of the Institute, with much though stimulated as to how to make such care available.

The Twentieth Annual Session of the American College of Physicians will be held in Detroit with headquarters at the Book-Cadillac Hotel, March 2-6, 1936. Dr. James Alex Miller, of New York City, is President of the College and his address will be on "The Changing Order in Medicine."

The American Board of Ophthalmology will hold an examination at Kansas City, May 11, at the time of the meeting of the A. M. A. All applications and case reports must be filed at least sixty days before date of examination. Address Dr. Thomas D. Allen, Assistant Secretary, 122 South Michigan Ave., Chicago, Illinois.

South Carolina Pediatric Meeting, Tuesday January 28, 1936.

Luncheon at Francis Marion Hotel, 1 P.M.

1. Remarks by the President—William Weston, Jr., M.D.

2. Clinical Case Reports—Joseph I. Waring, M.D., Wythe M. Rhett, M.D.

Limited to 5 minutes each.

3. How can the Pediatrician and the South Carolina Society for Crippled Children Work Together. Julian P. Price, M.D.

Limited to 15 minutes.

4. What We Hops To Do in South Carolina Under the Child Health Bureau—D. Lesesne Smith, M.D.

5. A Discussion of Acute Anterior Poliomyelitis.—Opened by invitation by Wilburt C. Davidson, M.D., Dean of Medical School, Duke University, Durham, N. C.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 296 (27848)
October 11, 1935
Service of Dr. G. P. Richards

Student Quantz (reading):

Negro female, age 36 years, admitted 4-1-35, died 7-17-35.

History: Cough and dyspnoea on exertion for 7 months. Unable to sleep at night without being "Pillowed up." Progressively increasing swelling of feet for 1 week, worse at night. Swelling of abdomen of 3 days duration. No cough before P. I.; no hemoptysis or night sweats. Pleural effusion 9-34. No statement on history as to fever. Nocturia 3-4 times; no burning or urgency. Menses regular, 28 day cycle, 3-7 days duration. Last menses Sept. 1934. No digestive symptoms. Injury to left breast a few days before admission.

Family History: Irrelevant. Married 1925, no children.

Exam: Fairly well developed and well nourished woman. Temp. 100, pulse 98, resp. 36 per minute. B.P. 176-120. Skin, eyes, ears, nose normal. Teeth dirty and carious. Cervical lymph glands palpable. Left breast enlarged and firm, 2 draining sinuses in left axilla. Lungs: Tactile fremitus, voice and breath sounds slightly greater over left lung. Dullness over both bases posteriorly, especially on left. Mediastinum normal. Cardiovascular: "Heart enlarged on percussion. Apex beat not satisfactorily located. Regular in rate and rhythm. Systolic murmur over mitral and aortic areas. A2 greater than P2. Radials are not tortuous or thickened." Abdomen: greatly distended. "Large smooth firm mass extending up to umbilicus." Some tenderness in R.L.Q. In sitting up position, tympany in upper abdomen, flatness in flanks; fluid wave present. Liver and spleen not felt. Edema of lower extremities noted.

Lab: Urine (4-2-35; 6-20-35) voided, S.G. 1.024, 1.020; alb. 0, 1 -; sugar, acetone, casts neg.; leukocytes 0-10 HPF; RBC 0, 0. Blood (4-2-35, 4-7-35, 6-20-35) Hb. 58, 46, 45 per cent (D). RBC -; 4,120,000, -. WBC 4,750, 5,350, 3,150. Archromia 2 plus. Polys 74, 75, 86 per cent. Lymphs 23, 22, 11 per cent. Monos 1, 2, 2 per cent. Eosinos 2, 1, 0 per cent. Blood Wass. neg. Pleural fluid 6-21-35): 210 cc. lemon-colored fluid from right chest, turbid, cells 1 plus, lymphs predominating; no bacteria; Routine culture "Large gram-positive bacillus"; Culture for t.b. neg. Culture of pus from breast (for t.b.) (4-17-35) neg. X-rays of chest (Sept. 1934, 4-4-35) See chart.

Course: Temp. of intermittent type throughout hospital stay, ranging upward to 100-103 each night, down to normal or below in A.M. Pulse followed temp. Resp. 20-30 during stay. B.P. remained about 160-110 for first few weeks, falling gradually to 110-80 on 6-19, not recorded after this. Dyspnoea improved on digitalis, edema gone after 6 days hospitalization. On 4-8 complained of pain in right shoulder and left axilla. On 4-24 a new area of swelling was noted in left axilla. Sinuses continued to drain throughout hospital stay. On 4-26 complained of pain and soreness in "bottom of stomach," and these continued intermittently. On 6-10, dullness and absent breath sounds again noted in both bases, somewhat more than on previous exam; no new chest findings. 6-21 Fluid obtained from right chest, none from left. On 7-14 pt. noted to be "clouded" mentally, sleeping most of the time. "Groans when aroused and movement appears to be very painful." Became progressively weaker and died at 7:45 A.M., 7-17-35.

Dr. Lynch (conducting): Mr. Settle, what does this case suggest to you?

Student Settle: The cough, dyspnoea, edema and ascites all suggest cardiac decompensation. The abdominal mass is probably not related to the abdominal fluid, and it is my idea that it represents fibroids of the uterus. The lump

in the breast is probably a result of the breast injury. The draining sinuses in the axilla, continuing to discharge until death, suggest a tuberculous process there, probably a tuberculous adenitis. The fluid in the pleural cavities may be either of tuberculous or cardiac origin. The blood pressure shows a hypertension on admission, which gradually approached normal on bed rest.

I believe that this patient had a tuberculous lymphadenitis in the left axilla, and probably a tuberculosis of both lungs. Hypertensive heart disease, with decompensation, was probably present also. I believe that death resulted from the tuberculous toxemia and infection.

Dr. Lynch: How does that sound to you, Mr. Elders?

Student Elders: A history of cough for 7 months, with weakness, fever, anemia, suggests tuberculosis. The temperature curve is especially suspicious, rising as it does in the evening and returning to normal again during the night. The laboratory examination of the pleural fluid suggests that it was tuberculous. If the abdominal fluid had been of cardiac origin, I would have expected it to clear up when the edema did, and so I am inclined to believe that she had a tuberculous peritonitis.

Assuming that the patient had a tuberculosis of the lungs, it would seem logical that she later developed a generalized miliary tuberculosis. A polyserosistis is not uncommon in miliary tuberculosis. Here we have evidence of the involvement of at least two serous cavities. The abdominal mass could be part of the peritoneal tuberculosis. When there is a tuberculosis of the mesenteric lymph glands associated with a tuberculous peritonitis, it is not uncommon that masses are felt. But I also believe that she had a hypertensive heart disease, with some decompensation.

Dr. Lynch: What would you like to know in order to complete the diagnostic work-up to your satisfaction?

Student Elders: I would like to see the x-ray of the chest.

Dr. Rudisill: On a prior admission, in September, 1934, this patient was first referred to us for a chest film. At that time some fluid was noted in the bases of both pleural cavities. The heart shadow and the aortic shadow were moderately enlarged. The small portion of the lung fields that could be clearly visualized, showed no pathology. The second film, taken on April 4th, 1935, appeared very much like the first, as you can see here (demonstrating films). There is some clearing of the fluid in the left chest, and the lung parenchyma still appears normal.

Dr. Lynch: What do you think of that, Mr. Elders?

Student Elders: Most of the pleural effusions are tuberculous, but in this case it could just as well be of cardiac origin.

Dr. Lynch: Are there any comments from the attending staff?

Dr. Robert Wilson, Jr.: It is usually very much safer to make only one diagnosis, if that will reasonably explain every factor of the case. Essential hypertension must have been present, but I do not believe that her heart was failing, or that she had any symptoms directly referable to her blood pressure. In this case all the symptoms and findings, except the blood pressure readings, could have been due to tuberculosis. The dyspnoea could have been due to the pleural effusions, which I believe were of tuberculous origin. The abdominal distention and fluid suggest tuberculous peritonitis. There may have been a tuberculous pericarditis as well. Edema is not uncommon in long-continued wasting diseases in which an anemia is present.

If this patient had had a failing heart, I would have expected rales in the chest and a palpable liver.

Student Pernwerth: I would like to ask Dr. Wilson a question. Wouldn't you expect to hear rales in the chest in pulmonary tuberculosis almost as constantly as in pulmonary edema?

Dr. Wilson: No. I believe that rales in the chest are universal and constant in pulmonary edema, and they are very frequently not heard in pulmonary tuberculosis.

Student Pernwerth: Still it seems to me that hypertensive heart disease with decompensation could serve as well for the unit diagnosis as tuberculosis. We must admit that the patient had essential hypertension. Cardiac decompensation could cause all the symptoms except the continued fever, which might easily be

explained on the basis of the low-grade suppurative process in the breast. The bilateral pleural effusions in 1934 might easily mean the beginning of decompensation at that time, when symptoms first became evident.

Dr. Chamberlain: I do not feel quite so strongly impelled to confine myself to one diagnosis, whether it be either tuberculosis or cardiac decompensation. Why not let them both have a part? The breast would not have continued to drain so long if the condition there had been a suppurative mastitis following trauma. And the blood count suggests a more chronic type of infection. I believe that the condition in the breast probably was tuberculous. But I believe that the first x-ray picture gives rather definite indication of heart failure, and the dyspnoea, edema and cough all tend to corroborate it. We cannot deny the existence of a hypertension: it was present for at least two weeks. That it fell to normal after that time may signify the hoped-for improvement in the cardiac situation, or it may mean the gradual onset of complete decompensation. She had no characteristic heart findings to help us with the problem.

The development of mental symptoms towards the end may have been due to a terminal tuberculous meningitis, which is frequently overlooked in moribund patients.

Dr. Lynch: Everything in this case except the blood pressure determinations can be explained, after the autopsy, on the basis of tuberculosis. The breast was definitely tuberculous, and the breast lesion appears to be the oldest lesion in the body. Altho there is definite caseation of the hilar lymph nodes, as one will find in primary pulmonary tuberculosis ("childhood tuberculosis"), there is no parenchymal lesion to correspond to the hilar lesion. Still, I fancy that her initial infection was in the lung. Apparently from the tuberculous lesion in the breast and axillary lymph nodes, an acute miliary tuberculosis developed, with a tuberculous polyserositis. There was a tuberculous pleurisy (bilateral), peritonitis, pericarditis, and meningitis. The enlargement of the cardiac area, manifest by x-ray, was doubtless a result of the pericarditis, as there was no demonstrable myocardial hypertrophy at the time of the autopsy. The edema probably resulted from a combination of tuberculous pericarditis and anemia. The anemia itself was probably of tuberculous origin; with widespread tuberculosis in all organs examined, it is logical that there should have been a tuberculous involvement of the bone marrow.

The meningitis was probably the cause of the cerebral symptoms for the last few days. But as you can see in the specimen, the tuberculosis of the meninges was of longer duration than that, as there is rather extensive caseation there, with some actual extension into the brain itself.

The abdominal mass was a fibromyoma of the uterus, which was quite large, about the size of a grapefruit.

I want to draw attention to one thing in particular in this case, and that is the common belief, prevalent both among patients and physicians, that an injury to the breast can cause a lump to develop there. Except when the injury to the breast is severe enough to cause a hematoma, I do not believe that injury will cause a lump. Rather, it takes an injury to call a woman's attention to a lump that has been present in the breast for some time. Generally speaking, it is not wise to wait and see if a lump in the breast, first noted after injury, will subside. Frequently cancers of the breast lose all their possibilities of cure in that time. If the lump is definitely not a hematoma, and if there is no evidence of suppuration in the breast, there is no reason for waiting.

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

RELATION OF BRONCHIECTASIS TO INFECTION OF THE PARANASAL SINUSES

By Dr. G. E. Hodge,
Arch. Otolaryn., Nov., 1935, p. 537

This relationship has been brought forward during the past fifteen years. Added interest and authority has been given by bronchoscopy and roentgenology, and by thoracic surgery and by the knowledge of the reaction of the mucous membranes of the respiratory tract to allergy and infection. Causal relationship between persistent bronchial suppuration and sinusitis was pointed out as early as 1914 by Thompson. It soon became established that a thorough examination of the sinuses should be made of all cases of pulmonary suppuration (Sergent, Rist, Webb, Gilbert and others) and that this suppuration tends to clear up unless kept active by sinusitis. (Mullin—Graham). So evident was this that Wasson in 1929 suggested the term broncho-sinusitis for a general infection of the entire respiratory tract.

The incidence of infection varies from 58 per cent (Quinn and Meyer) to 82 per cent (Clerf), with the maxillary sinus as the chief offender.

Routes of infection from sinuses to lung:

1. A connection exists between the lymphatic drainage of the maxillary sinuses and the lung (Mullin and Hyder).

2. Inhalation may also be the route of the infection from the sinuses to the lung (Pfhaler, LeMee, Bouchet); this has been proved by Quinn, Meyer, and McLaurin, in showing oil in the thorax after the instillation into the nostrils or antra of sleeping patients.

"These experiments clearly demonstrate that chronic sinusitis must play an important part in infections of the chest and that infection reaches the thorax chiefly by inhalation and by the lymphatic routes—These cases are often for years diagnosed as tuberculosis—The assumption then is that following sinusitis chronic bronchitis develops and in course of time bronchiectasis!" The method by which this occurs turns about the virulence of the organism, the individual susceptibility and in children upon immaturity of development, as is especially illustrated by the frequency of bronchiectasis in childhood; while Anspach suggested that atelectasis is the precusor of bronchiectasis in adults.

A triangular shadow at the base of the lung is a sign of atelectasis and bronchiectasis of the lower lobe. The drainage from this area is interfered with by thick secretion or in allergic swelling of the mucous membrane.

Bronchiectasis is thought to be produced by a deficiency of vitamins, a sinusitis from a deficienty of vitamin A. But a diet high in vitamins and deficient in protein will produce suppurative sinusitis and otitis, and a diet alone will not cure sinusitis.

Histocytes are the defensive cells in the acute infection while it is the plasma cells in the chronic cases.

Since hypoglycemia and ketosis play an injurious part in chronic antrum infection and bronchiectasis Sippe uses dextrose in their treatment; this also overcomes their inability to retain water in the tissues.

The present evidence tends to show that subsequent bronchial infection occurs on a suitable soil; such soil is frequently finding its occurrence in childhood.

Treatment should be of the upper respiratory; first of the sinuses, tonsils and adenoids, then of the lungs by bronchoscopic suction; postural treatment and vaccine therapy.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"THE QUESTION OF HOMOPLASTIC SKIN GRAFTING"

Not infrequently in patients having suffered extensive third degree burns there does not seem to be sufficient intact skin from which to provide grafts for the granulating area. Moreover in these seriously ill patients there is a natural disinclination to mutilate still more skin surface or subject them to the further discomforture of removal of skin from the donor site. It is in such cases that securing skin for grafting from a source other than the donor would be the ideal procedure—provided that it were possible. Concerning this there is considerable controversy. While a number of cases have been reported as successful, upon a critical analysis they do not seem to satisfy the necessary postulates and accordingly have to be discounted. That the procedure is impossible of accomplishment and may even be dangerous is the opinion of Drs. H. M. Trusler and H. D. Cogswell of Indianapolis—J. A. M. A. 104: 2076 June 8, 1935. They present five cases of their own and a very good discussion of the present day thought on the subject.

Transplanting skin from one place to another on the same body is known as autoplastic grafting. It is well recognized that this is a highly successful procedure. Transferring skin from one person to another is termed homoplastic grafting. It is concerning the possibility of this latter procedure that there is still some doubt. As a rule the grafts fail to take and have completely disappeared within two weeks. However in some cases the homo-grafts appear to take and look as healthy as auto-grafts made at the same time. This is much more likely if the patient and the donor have no blood incompatibility. It is this group of cases which accounts for the number of successful results reported. It is the contention of the authors that in spite of the favorable primary take, these grafts do not remain viable, but slough after two or three weeks as a rule. In one of their cases six weeks elapsed before necrosis began. When sloughing takes place the appearance is often that of infection, but in their opinion infection is a secondary development, as might be expected, and not a primary factor.

Homoplastic grafting is detrimental to healing, and even may be dangerous to the life of the host. In two of the author's cases homoplastic skin grafting was followed not only by necrosis of the grafts but by chills and septic temperature, even though the bloods of their donors were compatible. In one of these cases the grafts took, homoplastic and autoplastic alike, but after several days the child became toxic and died.

The failure of homoplastic skin grafting is considered as due to a biologic incompatibility —an antagonism of the host to the foreign protein of the skin of the donor. Technical error and infection can be controlled and can not be held accountable.

"The fact remains that, as commonly practiced, homografting of skin is useless, deleterious and unnecessary. Massive destruction of skin is usually due to a burn, and the individual who survives such an injury will have sufficient intact surface to make healing possible with the aid of grafts from the patient's own skin."

The advisability of early skin grafting can not be over-emphasized. By it much deformity, disfiguration and suffering will be prevented, and even lives saved.

SOCIETY REPORTS

OCONEE COUNTY MEDICAL SOCIETY

The Oconee County Medical Society met at Seneca, Monday night, December 9, 1935, Dr. J. E. Orr, President in the Chair.

The minutes of the previous meeting were presented orally by the Secretary.

The business meeting was then entered into. A report of the Hospital Committee was made by Dr. J. N. Webb and Dr. E. C. Doyle. The suggestion was made that each member exert his influence with the representatives in congress in behalf of the hospital.

The Secretary presented a communication from the Dean of the Medical College calling on all doctors to see their representative in the Legislature in regard to increased appropriation for the school.

Dr. J. H. Johns discussed the proposal at length and asked for information as to the real need of increased funds. Dr. Johns was requested to write the Dean for further information.

Dr. E. C. Doyle reported resolutions on the death of a former member, Dr. J. S. Stribling of Seneca. These resolutions were adopted by a rising vote.

On report of Censors Drs. Joe Johnson and V. W. Rhinehart were elected to membership. Election of officers resulted as follows.

Dr. W. C. Mays, Fair Play, S. C., President.

Dr. J. T. Davis, Walhalla, S. C., Vice President.

Dr. E. A. Hines, Seneca, S. C., Secretary.

Dr. Harry Ross was elected delegate to State Medical Association with power to appoint his alternate.

The Society entered into the Scientific Program. Dr. J. W. Jervey, Jr. of Greenville presented a paper on the Upper Respiratory Infections. The paper was highly complimented for the practical applications of same by the general practitioner.

Dr. Harry Ross presented a Case Report of Black Water Fever, which was discussed by Dr. Harper of Anderson, Dr. Hines of Seneca and others.

Dr. E. A. Hines presented a patient with Leukemia which disease was discussed by Dr. Frank Wrenn, Roentgenologist of the Anderson County Hospital and many others.

Dr. R. C. Bruce, of Greenville, President Elect S. C. Med. Asso. and Dr. Buck Pressly, Councilor 3rd District were present as visitors.

A delightful Dutch dinner was enjoyed by the members of whom the following were present, Drs. E. C. Doyle, Johns, Orr, Ross, Webb, Simpson, Hines, Davis, Bell, Mays and members elect, Johnson and Rhinehart.

E. A. Hines, Secretary.

COLUMBIA MEDICAL SOCIETY

The annual election of officers was held at the Columbia Hotel, December 9, 1935, at 8:30 P. M., Dr. O. P. Mayer, presiding.

Minutes of the previous scientific meeting was read and adopted.

Dr. O. P. Mayer, President, presented a brief summary of the activities and financial status of the society during the year 1935, and in closing thanked the society and committees for their cooperation.

Election of officers was next in order, Drs. Adcock, Cheatham and Quattlebaum acted as tellers.

Dr. Theo. M. DuBose, Jr. was elected president for the year 1936 and was escorted to the chair by Dr. Hutchinson and Dr. Rodgers.

Dr. David Adcock was elected Vice President. Dr. Benj. Rubinowitz was reelected Secretary. Dr. Thomas Dotterer was reelected Treasurer.

Delegates elected for 2 years were Dr. Floyd Rodgers, Dr. Manly Hutchinson and Dr. Watson Talbert. Dr. Walter Bristow was elected delegate for one year to fill the unexpired term of Dr. T. M. DuBose, who by the election to the presidency became automatically a delegate. Dr. E. W. Barron is a hold over delegate for one year.

Dr. A. F. Burnside was elected to serve on the Board of Censors for three years. The hold

overs on the board are Dr. Manly Huntchinson and Dr. H. H. Plowden.

Dr. DuBose announced that he will appoint committees for year 1936 at a later date.

There were 40 members present.

Society adjourned at 9:45 P. M.

Respectfully submitted,

Benj. Rubinowitz, Secretary.

EDISTO MEDICAL SOCIETY

The regular meeting of the Edisto Medical Society was held Dec. 19, 1935, at 2:00 P. M., at the Hotel Eutaw with the president, Dr. Jas. A. Forte, presiding.

Dr. E. W. Barron read a paper on "Care of the New Born," and Dr. T. D. Dotterer read a paper on "Infant Feeding." Both papers were very interesting and were freely discussed.

Those present were Drs. Browning, Mack, Matthews, C. I. Green, Schiffley, Shecut, Brabham, Mobley, Bolin, Black, Lowman, Eargle, Forte, and Glennan.

Dr. Browning stated that there was a man practising at Elloree who was a chiropractor and did not have a license to practice medicine. He asked that something be done to stop this sort of thing.

Respectfully submitted,

H. M. Eargle, M.D.,

Sec. Edisto Medical Society.

TRIBUTE TO DR. WALLER H. NARDIN

In the recent death of Dr. W. H. Nardin the Anderson County Medical Society suffered a keen loss. For more than a third of a century he was an active member of this Society, and his sound judgment and wise counsel will be greatly missed. In recording this, our tribute of respect to his memory, we make no effort to catalog the numerous honors that were his during the thirty-five years of active practice. Rather do we wish to evaluate his particular contribution to our professional and community life.

Dr. Nardin was a student. He built up an excellent library, and a well chosen list of medical journals were always in evidence in his office. He kept up with advancing medical thought, but he had decided opinions of his own; and when those ran counter to medical opinion, he followed his own judgment. For instance, he believed and practiced that for short-office operations choloroform was the anesthetic of choice. And in doing many thousand office operations he developed a rare skill in supervising the administration of chloroform.

Dr. Nardin was the first doctor in Anderson who became a specialist, and for a period of more than twenty years he had a very large practice in his chosen field. He demonstrated to the profession of this county that the ethical technique is quite successful in building up a referred practice. To him this was one of the "durable satisfactions" of his professional career.

The outstanding community service that Dr. Nardin rendered was his work among boys. For thirty-five years he was father confessor, big brother, buddy and pal to the high school boys of Anderson. During these years he gave to each succeeding group freely of his time and advice and many boys—now men—in widely scattered places would gladly join us today in paying tribute to him for this unselfish service. To him during the long evening days of his last illness this work for his boys was one of the "durable satisfactions" of life.

No appraisal of Dr. Nardin by one who knew him well would be complete that did not mention his love of nature. To him "nature was a revelation of God." He loved to "go forth under the open sky and list to nature's teaching." Wild flowers, trees, shrubs, and birds were his friends.

"To him who in the love of nature holds
Communion with her visible forms, she speaks
A various language; for his gayer hours
She has a voice of gladness, and a smile
And eloquence of beauty, and she glides
Into his darker musings with a mild
And healing sympathy, that steals away
Their sharpness, ere he is aware."

Was it not beautifully fitting that the long tedious days of his last illness were rewarded by several months of improved health? Much of this time he spent in very close communion

wth the visible forms of nature, and became acquainted with her various languages. But the dominant note must have been one of a deep abiding peace and healing sympathy that stole away the sharpness of his forced retirement and suffering. And "so nature dealt with him and by the hand led him to rest so gently that he went scarce knowing if he wished to go or stay."

Committee—Anderson County Medical Society.

This tribute was read at last regular meeting December 11, 1935.

PEE DEE MEDICAL ASSOCIATION

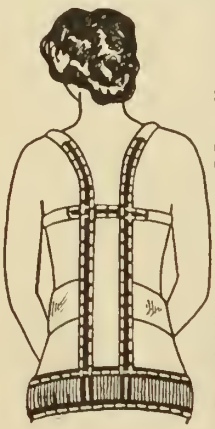
The following program was given at the 87th meeting of the Pee Dee Medical Association, held at Florence, S. C., Tuesday Evening, November 26, 1935:

1. Recent Advances in the Treatment of Acute Infectious Diseases in Children, Dr. Sam Ravenel, Greensboro, N. C.
2. Indications for Surgery in the Treatment of Thyroid Disease, Dr. Addison Brenizer, Charlotte, N. C.
3. Endocrine Therapy in Obstetrics and Gynecology, Dr. Oren Moore, Charlotte, N. C.
4. The Igorot and Modern Medicine, Dr. Hawkins K. Jenkins, Sagada, P. I.



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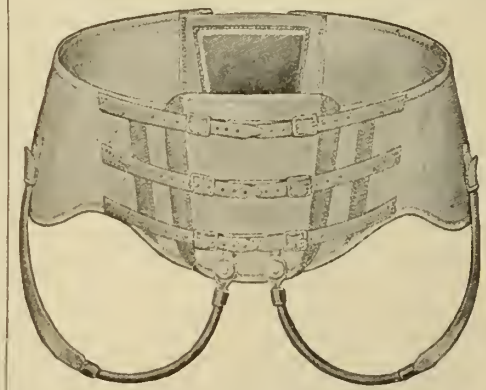
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Walking Caliper	17.50
Walking Iron	1.00
Knee Gage	20.00
French Truss	3.50
Hood Truss	4.00

Sacro Iliac Belt **$3.00**



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THE THREE "P's" OF PHTHISIS

By

JOHN M. PRESTON, M.D.,
Lancaster, S. C.

Without fear of contradiction I might well consider the three "P's" of Phthisis, or Pulmonary Tuberculosis, to be Patience, Persistence, and Perseverance, for certainly Patience on the part of both Patient and Physician is of paramount importance. However, this brief discussion is confined to the surgical proceedures of Pneumothorax, Phreniclasis and Pneumolysis. These three relatively simple proceedures, all based on the fundamental principle of rest to the lung are very often of invaluable aid in the treatment of Phthisical patients.

To plunge abruptly into their discussion we shall begin with Pneumothorax. As indicated by its name it means air in the thoracic cavity, certainly in an abnormal relation. In simple breathing there is expansion and contraction of the chest cavity with a corresponding ingress and egress of air, caused by the altered relation between intrathoracic and atmospheric pressure. Consequently the nearer the approach to atmospheric pressure within a chest, the less the motion of the lung in that chest. It is on this simple principle that Pneumothorax is wrought. By simply injecting air (frequently referred to as "gas") into the pleural cavity the parietal and visceral layers are separated, with resultant decrease in the expansion of the affected lung. Cavities are thus collapsed and allowed to heal. Exudative lesions are compressed and healing is thus accelerated. Motion within the lung is brought to almost nil.

Indications for Pneumothorax are:

1. To partially or completely immobilize a lung.
2. Cavity in a lung.
3. Exudative type in moderately advanced stage. (This group includes all females in the teen-age, and most negroes.)
4. Spreading lesion.
5. Severe hemorrhage from a lung.

Pneumothorax is unfortunately, not the complete answer to the Phthisiotherapist's prayer, but it is a most valuable adjunct in his handling of phthisical patients.

The initial injection of air is the one which requires the utmost in skill of the operator. The two layers of pleura are in close contact and may even be adhered due to proliferative changes caused by the underlying disease. On the other hand the visceral pleura may be greatly weakened by the disease and admit of too ready puncture into a cavity. A short-bevel needle of medium capacity is slowly introduced through a novocainized area until there is observed on the watermanometer of the Pneumothorax outfit a waver in the column due to inspiration and forced expiration. There is usually a definite "feel" of altered resistance, to experienced hands, as the needle punctures the parietal pleura. The volume of the initial injection varies with different operators, but seldom exceeds 1000 cc., about 300 cc. appearing a fair average. Some clinics complete their collapse of the lung fairly rapidly, and some more slowly. To the conservative mind the slower method seems to offer the same advantages with less danger of attendant shock. It must be admitted, however, that rapid compression in

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Read before the Fifth District Medical Society at Camden, S. C., November, 1935.

cases of severe hemorrhage have proved to be life saving. The frequency of refillings, also, varies with different clinics. Some clinics give small amounts often, while others prefer large volumes at less frequent intervals. In places equipped and staffed for such work, the frequent, small refills might well have the preference, as they certainly maintain a more constant and even pressure, but where the operation requires much inconvenience and activity on the part of the semi-ambulatory and bed patient the less frequent refills seem to suffice. The interval observed by the writer in various clinics was from 2 days to one month. An average of from 5 to 7 days appeared to be a normal interval.

The necessity for "refills," is explained by the fact that the air injected is absorbed by the pleura. With increasing volumes of air injected into the pleural cavity the pleural surfaces are increasingly separated and the lung correspondingly collapsed, preferably to the point of complete deflation.

The amount of pressure created within the thorax by pneumothorax is a matter of individual preference. Saranac Lake Clinics never exceed negative or zero pressures while Bellevue Hospital believes in the use of positive pressures in most stubborn cases.

Unfortunately, however, the proceedure is not so simple and satisfactory as here-to-fore described. The main difficulty is encountered from adhesions between the two pleural surfaces. How to deal with these will be considered under Pneumolysis. The so-called "creeping lung" which one occasionally meets with presents a most serious obstacle to Pneumothorax. This condition is simply a progressing adhesion beginning at the hilum and eventually encircling the lung, thus pulling it out or expanding it again. Thoracoplasty is the only recourse in such a condition.

Phrenicectomy was hailed a few years ago as the long sought method of quick cure for the Tuberculous. As is so frequently the case with some over-enthusiastically received discovery, the pendulum of popular favor is now swinging away from phrenic operations. All types of operation on the phrenic nerve with paralysis of the affected side of the diaphragm as a goal have been tried. These have included Phrenectomy (same as Phrenicectomy) which is removal or complete resection of the Phrenic nerve, Phrenicexoresis, which is pulling out of the nerve, Phreniclasis, or crushing of the nerve with a clamp, and Phrenicotomy or surgical division of the Phrenic nerve and its accessory. Phrenecoexeresis, or Phrenic Avulsion, and Phrenectomy are practically obsolete now as they cause irreparable changes so that if they do not prove successful they can not be substituted by any other procedure. There is also some attendant danger of hemorrhage in cases of phrenic avulsion.

Phrenicotomy has proven just as unsatisfactory except as a means of making the diaphragmatic paralysis permanent. Therefore, the operation of choice today is the Phreniclasis. This has the advantage of being not only a simple surgical procedure, but also a relatively safe experimental measure. When properly done, the paralysis of the diaphragm lasts from six to nine months, or occasionally longer. If the patient's condition, as determined by history, physical examination, X-ray fluroscope, and other laboratory tests, warrants it, the operation can be repeated *per se*, or made permanent by performing a phrenicotomy. This is, however, rarely necessary. As an Internist, I do not presume to give any details of the surgical procedure, but will presume to drop this helpful hint. Many surgeons loop a black silk ligature around the nerve at the first operation and bring the loose ends up into the wound where they bury them just beneath the skin. This greatly facilitates locating the proper nerve at the second operation, when scar-tissue has largely obliterated the landmarks. Another timely suggestion is to be sure you get the accessory from the brachial plexus, or you will be disappointed in your results.

Some physicians object to the phrenic operation on the ground that it compresses only the lower third of the lung, and is hence indicated in very few cases. These objectors overlook the fact that when an elastic structure under tension is allowed to contract, it contracts an equal amount in all portions. A large adhesion, however, in the upper portion of the chest, which was keeping a cavity open, would prob-

ably continue to hold it open even in the face of a diaphragmatic paralysis. The apex of the lung is so located as to get practically no expansion from the up and down motion of the ribs. Therefore, the downward pull of the contracting diaphragm is its only method of expansion. This shows that Phrenics are indicated in apical lesions. Scaleneotomy in conjunction with phrenics give good results in many such cases.

Phrenic operations are indicated only in selected cases. Some of these indications are:

1. Many small lesions with or without cavities.
2. Large unilateral lesions in which Pneumothorax is impossible.
3. In many bilateral lesions, either on the worst side, or on the side where Pneumothorax cannot be given.
4. As an adjunct to Pneumothorax (cases with Diaphragmatic adhesions or where collapse therapy must be abandoned.)
5. Controlling Hemorrhage.
6. In cases where the patient cannot get Pneumothorax refills.

After a phrenic operation most patients will be seen to cough less, and to raise their sputum with much less effort.

When considering the minor results obtained by phrenic operations it is necessary to remember that it is a minor procedure. An old fibrous walled cavity will naturally not collapse as readily after a Phrenic operation as a thin walled one. Phrenics undoubtedly do have their place in properly selected cases, but one must not expect too much of them. The success of the Phreniclasis depends on how much you expected to accomplish when you resorted to its use.

Pneumolysis the last operation to be considered in this discussion, is the surgical separation of the pleural layers in order to facilitate lung collapse. This is known, strictly as internal pneumolysis, the external type being the stripping of the parietal pleura from the fascia of the thoracic wall, and having no place in this treatise. The only form of operation to be described here is the closed method of cutting pleural adhesions, or the Jacobean Operation. Through the development of the thoracoscope to its present state of perfection we are now able to make many cases of Pneumothorax much more effective than formerly.

The typical case in which Pneumolysis is indicated is one in which Pneumothorax is being used, but which is not closing a cavity adequately, because of pleural adhesions. As was indicated earlier in this paper, it is not an uncommon experience to get a 90 or 95 per cent collapse of a lung with pneumothorax, and yet fail to get the proper results because the very cavity which you are trying to close is held wide open by bands of adhesions. In such selected cases the double puncture method of intrathoracic surgery is the answer to this perplexing problem.

The operation is usually done with the patient sitting up or lying with the operative side up so that any fluid in the chest will be kept out of the way by gravity. Two trocars are introduced through the intercostal spaces, one in the axillary line and the other in the front or back of the chest. Through the trocar in the axilla there is a flexible handle having on its tip either an actual cautery or an electrosurgical knife, usually the former. The other trocar carries the endoscope, much like an ordinary cystoscope. By looking into the pleural cavity with the telescope the operator locates his adhesions and proceeds to cut them with the cautery, by direct vision. In cutting long, string adhesions, there is usually no pain felt by the patient, but if it is necessary to cut very close to the parietal pleura there is sometimes the sensation of pain. If this occurs novocaine can be applied to take care of the situation. The cutting should be done far enough from the parietal pleura to escape pain, and far enough from the visceral to escape the danger of rupturing a cavity. Low heat is usually used in the cautery so as to prevent bleeding. This makes the cutting of large thick adhesions very slow, but speed is not essential in this work. Some of these operations have taken several hours at a single sitting, and were terminated then only because the patient and the surgeon were becoming very tired of maintaining their awkward positions.

Unfortunately the X-ray picture does not always give you a clear conception of what you

are going to find in the chest. Cases which appear from X-ray to have one or two easily cut adhesions may have dozens of them, or even be inoperable, while some which appear to have very large adhesions may appear so from the angle at which the picture was taken. A small stab wound through a novocainized intercostal space causes very little discomfort to the patient and makes it well worthwhile to slip in a thoracoscope and actually see if the case is operable or not. In other words an exploratory puncture is a safe procedure, not fraught with the seriousness of an exploratory laporotomy and hence undertaken much more readily.

After Pneumolysis there is frequently a subcutaneous emphysema lasting from 2 to 4 days, but this usually passes off spontaneously without ill effects.

This paper has no bibliography, contains no actual quotations, and no names. It is merely a rambling sort of reminescence of cases actually seen and lectures heard from some of the best men in two of our country's greatest Tuberculosis Clinics today. It does not purport to be an authoritative treatise, but merely an informative discussion offered here in case any of you have the misfortune of knowing as little about some of the present day chest work as I do.

THE CLINICAL APPROACH

By
DAVID RIESMAN, M.D., Sc.D.,
Philadelphia

Your kind invitation to deliver the Founders' Day Address awakened in me a natural desire to know something of the history of the Medical School of South Carolina. I found that true to South Carolinian traditions its history is full of romance. Moreover, its beginnings were closely interwoven with my own state of Pennsylvania and the city of Philadelphia. James Ramsay, one of the founders of your medical college, was the son of the famous David Ramsay, a native of Lancaster, Pennsylvania, graduate of the University of Pennsylvania, patriot and historian of the American Revolution. Henry Rutledge Frost and Samuel Henry Dickson, co-founders of the school, were also graduates of the University of Pennsylvania. Frost for two years was a resident physician in the same hospital in which I served my internship some generations later. Dr. Thomas Cooper, physician, lawyer, educator, statesman, for twelve years President of the University of South Carolina, also had contacts with Pennsylvania for he migrated there from London. Well trained at Oxford and in medicine and law, he made a distinct contribution to life in America. Cooper was President at the time when J. Marion Sims, one of the greatest figures in American medicine, was a student in the college. Sims afterwards was graduated from the Jefferson Medical College in Philadelphia, thus creating another connection between Penn's city and your University. Edmund Ravenel, first Professor of Chemistry and Pharmacy, and John Edward Holbrook, Professor of Anatomy in the first faculty, were also graduates of the University of Pennsylvania.

The Medical School of University of Pennsylvania from which nearly all of the original faculty had received their degree, was the first medical school established in this country. In a strict sense it was the daughter of the University of Edinburgh, a fact of interest to South Carolinians inasmuch as ten native sons of South Carolina between 1768 and 1778 like Morgan and Shippen, the founders of the medical school in Philadelphia, received their degree from the Scottish University.

Coming down to more recent times I find another bond uniting my Alma Mater with yours. John Guiteras, Professor of Pathology and Practise of Medicine and Clinical Medicine in your school from 1886 to 1888, left Charleston to become Professor of Pathology in the University of Pennsylvania. He was my teacher; afterwards I became his assistant and when the Cuban war broke out and his patriotic energies were enlisted on behalf of his native island, all of his work devolved upon me; thus as a pupil and associate of your former professor of medicine, I may claim a relationship to your school.

For the specific subject of my address today

Founder's Day Address delivered by invitation before the Medical College of the State of South Carolina, November 13, 1935.

I have chosen "The Clinical Approach," by which I mean the approach of the doctor to his patient. This involves a relation that is older than the memory of man. In a sense it is the same now as it was in the beginning. I shall describe it as I have observed it in a long and fairly active life.

When a patient who deems himself ill pays his first visit to a doctor the occasion is to him one of momentous significance. To the doctor the visit may be all in the day's work. If he, the doctor, does not have the right understanding of the human soul, if he cannot put himself in the patient's place, not alone will he fail to satisfy the patient but he will also not be true to the immemorial ideals of the art of medicine.

What does the patient want when he calls upon the doctor? He wants to be relieved of his suffering and he wants to be understood. The doctor must therefore not only discover the physical defects but he must also penetrate the mind of the patient. Where the power to do the one and the power to do the other are conjoined, there the patient will find a tower of strength, which is what the physician should be. As Llewellys Barker puts it "the practitioner of medicine must learn to understand not only the bodies of his patients but their minds also, their thoughts, their desires, their pleasures, their purposes, their disappointments—the strings of their behavior."

It is not enough to be able to discover the physical ills and the mental perturbations—the true physician must be resourceful, sympathetic and patient. I have wondered at times whether Job, who bore his physical sufferings with such exemplary strength, would have listened uncomplainingly and patiently to the repetitious, uninterruptible stories of complaints of some neurotic women I have seen and listened to? And yet it is demanded of the doctor that he listen patiently and with his whole mind.

To do our full duty as physicians requires a multitude of activities and procedures, but first of all it requires knowledge. It is the charm of medicine that it is never static; it grows like a snowball on an Alpine mountain, but without end. Medicine is no longer what Francis Bacon said it was in his time—"More repetition of the opinions of previous authors than the creation of new knowledge." No other human discipline is so active, none so eager to incorporate the work of other sciences into itself. One needs only to read the reports of recent meetings such as the one in Detroit or the one in San Francisco, as published in the New York Times and in Time, to realize this fact.

A further proof of activity, not always well directed we must admit, is the tremendous literary output. While the theologian is interested only in the literature of his own denomination, the lawyer in the reports of a few courts, physicians eagerly scan all the new things of all civilized countries either in the original or in abstracts in their vernacular journals. The late Colonel Fielding H. Garrison informed me shortly before his death that there were 1925 medical journals published in 1927, an enormous output, but all in a sense belonging to every physician who wants to read. Needless to say there is too much to read and a moratorium on medical printing would be a great boon, but it cannot be achieved.

Another feature differentiating the doctor from the preacher and the lawyer is his eagerness to improve himself, to increase his knowledge in other ways than by reading. That accounts for the support he gives to innumerable medical societies. I was in Detroit in October and saw thousands of practising physicians from all parts of the country, sitting for five days at meetings from 8 A.M. to 10 P.M., with only a little time out for meals. There were young men and old men, country practitioners and titled teachers. Many took notes diligently as they did when they were medical students. I was proud of my doctor clan—no other persons in the wide world make such monetary sacrifices or go to so much truoble to increase their knowledge. The public does not realize the import of postgraduate study, it overlooks the fact that thereby the doctor is able to render better service to his patients. A community could well afford to subsidize its doctors for such study.

Medicine, I am happy to say, is steadily becoming more of a science, a science that absorbs into itself the work of other sciences, especially of physics and chemistry. There is,

however, a danger in this transformation, the danger that in the pursuit of the science of medicine, the art of medicine may be neglected, may be relegated to a secondary place. It is all too easy to overrate the achievements of science. Thus H. G. Wells says extravagantly, "Scientific work is a world apart, a magic island cut off from futility." He does not realize that much of the work coming out of the science laboratory has the same cosmic value as some of the theses for the Ph.D. degree. I am afraid we are suffering in medicine as in other branches of learning "from an excess of useful knowledge and a deficiency of ideas."

There is a tendency among some medical scientists to deprecate work done at the bedside. In their eyes nothing is truly respectable that has not in it an algebraic equation or a graph. And the medical man has nearly reached the same conclusion and in consequence has developed an inferiority complex which makes him bow down humbly at the feet of the laboratory investigator. Is that a proper state of affairs? I do not think so. In my opinion the bedside offers endless opportunities for clinical research, for research which as a product of the mind requires as high an intelligence as any laboratory problem. Furthermore, a difficult case in diagnosis may make demands on the mentality such as are rarely known to the average performer of animal experiments. I am saying this because I want to make bedside study again as respectable and as reputable as it was in the day of Graves, Bright, Addison, Trousseau, Charcot, Leyden, Struempell, Da Costa, Janeway, Osler. There is, however, a difference between these great scientists—for scientists they were, although they did not make use of costly apparatus—and the best clinicians of today. The latter know enough of the science of medicine and of the possibilities of the laboratory to give their clinical studies a broader and fuller basis.

Insulin is a product of intensive laboratory research but its uses and usefulness could be tested only by scientifically-minded, honest clinicians. In pernicious anemia the association of scientific laboratory experiments and careful bedside study has given us power over a disease that until 1926 was considered utterly hopeless.

To me the finest combination imaginable is a clinician trained both in the laboratory and at the bedside, who despite his deep faith in the laboratory has not lost sight of the immemorial methods of observation, of the value of a good history and a thorough physical examination, an examination aided by all the refinements of the laboratory applicable to the case in hand. I am using the words "applicable to the case in hand" advisedly for they imply, as they are intended to do, disapproval of the wholesale or hopper method of laboratory examination so popular in many quarters.

The routine ordering of a multitude of laboratory tests though it may eventually lead to a correct diagnosis, often goes with an indifferent examination at the bedside. Let the laboratory do it, is the thought of many who fail to appreciate the value of the traditional methods of studying patients.

I look upon the laboratory not as a separate institution to which one should appeal for a diagnosis but as a limited source of information to be used to fortify or corroborate a diagnosis already made on the basis of the history and the physical examination. There are of course instances in which the final diagnosis cannot be made without the laboratory. But a provisional diagnosis is nearly always possible and that provisional diagnosis should guide and determine the laboratory studies to be made. Dr. Stillman of New York once wrote an article in which he spoke of an interne in a New York hospital who on the admission of a patient complaining of cough, wrote, 'Sputum to laboratory.' The sputum was sent every day and after many trials—I believe twelve—the report came back "tubercle bacilli present." The resident physician was under the impression that he had made the diagnosis. The question is who was more responsible, the nurse who sent the sputum faithfully every day until the result was obtained or the woman technician in the laboratory who looked conscientiously for tubercle bacilli and found them? Needless to say the interne, in his reliance upon the laboratory, had neglected a thorough physical examination.

Every young physician ought to be able to perform all the essential laboratory tests him-

self. The existence of clinical laboratories has made it entirely too easy to obtain reports, usually made by technicians to whom the patient is merely a number. I do not mean to say that the doctor should do all the laboratory tests but he should know how they are done and until his practice is very large, he should at least make his own urine, blood and puncture fluid examinations, as well as the most important chemical studies of the blood.

The student of today is very apt to think that his generation and perhaps the one immediately preceding it have made all the important discoveries known in medicine. This is far, far removed from the truth. Virtually most of the diseases we know were discovered and described ages ago. A few have been added but the terminology in which their symptoms are described is that of the past and our methods of physical diagnosis aside from the use of instruments of precision are those that we owe to Auenbrugger and Laennec.

The first step in a complete examination is the obtaining of a good history. I believe one ought to let the patient tell his own story, supplemented by occasional questions and to make no notes until one has gotten a lead or the drift of the patient's complaints; then the questions designed to bring the complaints to a focus can be more easily asked. It takes patience to listen to "organ" recitals but patience brings patients.

While asking questions and getting answers the alert physician studies the patient's psychology, his mental make-up, determining in the process where he or she exaggerates or minimizes symptoms. As I consider this phase of history taking important, I do not favor the questionaire type of blank which provides for a check or a plus or minus sign after every question. It is too mechanical and gives no chance for psychologic penetration into the patient's ego.

The family history is of great importance especially in obscure cases in which malignant disease is a possibility. A history of such disease among blood relatives renders the diagnosis of malignant disease more plausible.

Our knowledge of hereditary diseases is still fragmentary. We know much about little things, about heredity in pease and in fruit flies but little about heredity in man. By paying attention to this subject in our histories we shall in time accumulate a body of knowledge that will tell us what diseases are inherited on Mendelian or definitely biological lines. Hemophilia, angina pectoris, hypertension, diabetes, pernicious anemia and others may belong here.

A good history takes account of the occupation of the patient—not merely in a single word such as bookkeeper, laborer, carpenter or engineer; it goes into detail as to whether the work is indoors or out-of-doors, standing or sitting, in good light or bad, in a dusty or a non-dusty atmosphere. I remember a patient, a young road engineer, 29 years of age, who was supposed to be dying of metastatic carcinoma of the lung. The lungs as was shown in X-ray films were filled with innumerable small nodules. The patient was more short of breath any anyone I have ever seen. I could find no primary growth so I went a little more carefully into the history and found that as a road engineer he had been exposed to the dust of crushed stone, the unloading of which he witnessed day after day. It was easy on the basis of this historic finding to make the diagnosis of silicosis which was afterwards confirmed at autopsy.

Another feature the historian must take into account in the study of patients is the social and domestic environment. Many a case of neurosis or of phobia will remain a sealed mystery unless the doctor finds in the anamnesis the open sesame. Until the advent of Freud the key was often hard to find but by means of psychoanalysis the physician is now able to penetrate into the subconscious mind and find the hidden springs of many neuroses and anxiety states. I do not think that in the average case it is necessary to use the time-consuming and costly Freudian methods. Nevertheless, the discoveries of Freud,—the greatest psychologist since Aristotle, as he has been called—of Franz Alexander and of others have definitely attracted our attention to deep-seated disappointments and discontents, to shocks and other psychic trauma, as a cause of functional disturbances, many of which are attributed to organic disease. That sexual frustrations are an important element in such conditions will not be denied by anyone with large experience in

mental and nervous diseases; furthermore, many problems of child psychology are not understandable unless one is aware of such concepts as the inferiority complex, mother fixation, etc., ideas and phrases we owe to psychoanalysis.

The history likewise includes data as to the habits of eating, sleeping, hours of work, hours of recreation, kind of recreation, the sex life, the use of narcotics, cosmetics, etc. There are so many things that we now know play a role as possible factors in disease that the taking of a history becomes a real cross-examination.

A few days ago I was asked to speak to a group of business women on how to preserve health. Thinking about what I should say I came to realize how important it was for such women to know the value of sleep, of recreation, of slow eating, as well as the foolishness of dietetic fads, especially those designed to reduce weight.

After the history is completed then follows the physical examination, and here I want to say that one of the most important elements is routine, a routine method which the physician follows automatically in every case.

I have always told my students that I did not ask anything unreasonable in the physical examination. All that I wanted them to examine was what lay between the crown of the head and the soles of the feet— a capite ad calcem was the ancient terse phrase.

The patient must be stripped to the waist, the back and the front must be examined. There are many conditions that are only discoverable when examining the back, such as chronic forms of pneumonia, certain types of aneurysm, Pott's disease, etc.

A complete examination includes of course the reflexes, the important ones in all cases and special ones in cases of nervous diseases. Digital examination of the rectum should never be omitted—it may prevent an error in diagnosis that can cost the patient's life.

When the physical examination, including the taking of temperature, pulse, respiration, blood pressure, height and weight, is completed, the laboratory studies begin. Some of these are routine, that is they must be made in every case no matter how trivial. Once a patient came to see me from Atlantic City saying that he had had a cold for some time and that his wife had insisted that on his next visit to Philadelphia he should see me. I said "Very well, I want to examine you. He said "Oh, doctor, there is nothing the matter with me but a slight cold. I am very busy this morning. Can you give me something for my cough?" When I declined, he consented to the examination—I found that he had over seven percent of sugar in the urine and was totally unaware of his diabetic state.

The routine laboratory examinations comprise urine examination and a complete blood count. In hospitals the Wassermann test is almost routine, in private practice this is not necessary, for many persons come with ailments that are diagnosed immediately and without difficulty. The alert physician will however have the test made whenever there is the least suspicion that syphilis might be a factor.

Blood chemical studies are of value, not only in the individual case but through accumulated data they teach us certain fundamental facts about the constitution of the blood. However, one must know how to interpret the data supplied by the laboratory. During the last few years I have seen a number of persons in whom the non-protein nitrogen or the urea nitrogen was increased eight or ten fold, suggesting advanced disease of the kidneys. A careful analysis showed that this finding was the result of dehydration and not of renal disease.

Basal metabolic rates are of great diagnostic value but here too one must not be carried away by the laboratory results but must stand on the firm ground of clinical experience.

The electrocardiograph is a useful instrument which supplies a permanent record of the heart's behavior, a record that can be compared with future tracings. But one must not get the idea, in the belief that the electrocardiograph tells us all that we need to know, that it is no longer important to make the most careful physical examination of the heart. The electrocardiograph can never take the place of the experience of the careful clinician who in the last analysis is best able to arrive at a correct diagnosis and prognosis.

The x-ray is the most important medical discovery of the last fifty years; as an aid to diag-

nosis it is indispensable and as a method of treatment its value is daily increasing. The ease with which x-ray examinations can be ordered in the hospital by the intern, who gives no thought to the expense involved, as well as the information given by the roentgen ray imbues the young physician with the idea that medical diagnosis is not possible without the x-ray. He is likely to steer his course entirely by the reports received. Such an attitude has serious dangers. In the world outside, away from the hospital, x-ray examinations are made by all sorts of men, some well trained, some ill trained. Things are read into x-ray films that do not exist. I have always urged my students to depend upon the clinical findings based on careful study if the x-ray findings are at variance, unless the study was made by a conscientious and experienced roentgenologist.

My further advice is not to make unnecessary x-ray examinations for they are expensive—someone has to pay for them.

I now come to the last phase of the patient's visit to the doctor—the advice. Putting myself in the patient's place I ask myself "what do I expect the doctor to tell me?" Should I be satisfied if he said "Have this prescription filled and take a teaspoonful in water three times a day after meals." There are innocent persons who have such an Old-World awe for the doctor that they might ask nothing more, but the intelligent American would not be satisfied. The patient expects some sort of explanation of the nature of his trouble and he does not want all hope taken away. I know of few things more cruel than the taking away of hope. Dante was aware of this when he put over the doors of his Inferno—"Lasciate ogni speranza ch'entrate qui"—"Leave hope behind ye who enter here." Sometimes we cannot avoid destroying hope. The patient may insist on knowing the whole unvarnished truth. It is however a trying moment for the sensitive doctor.

Advice should be explicit and specific. I need not go into details as to what these words signify. The modern doctor is often charged with being too oracular. He clings in many instances to the habit of past ages so caustically exposed by Moliere. The educated laity today want information. The doctor must be willing to give reasons for his advice. His failure to do so drives many patients into the arms of cults. A man who says, "You have a displaced vertebra," gives an explanation that satisfies even if it is irrational and untrue. If the treatment helps it naturally convinces the patient that the diagnosis was right, although we know that it does not afford such proof.

While I am speaking of treatment at the hands of cultists I want to say that we of the regular profession—ancient and honorable—must not ignore in ostrich fashion the achievements of irregular practitioners. They may have something to teach us.

In giving advice the doctor must not overlook any obscure facts that the history has revealed, and on the basis of such facts he may have to shape the patient's life for the future. Last week a woman was referred to me from another city. She felt out of sorts and discontented, yet she was not ill physically. Examination showed no organic disease but the history revealed an utterly empty life which she tried to fill with contract and cigarettes. I said jestingly to her husband "How often does she play bridge, eight days a week?" "More than that," he answered.

Medicine is of little avail in such a case; nor is it sufficient to say "Don't smoke so much, and don't play so much." Such advice is too easy and will not be heeded. What was required in that woman was to find an occupation for her, an interesting job, and that is what I dwelt on in my talk with her and in my report to the family physician.

I am nearing the end of my homily and shall add only a few words more. The doctor who cultivates the right clinical approach will enjoy his life more than any other man. He will love medicine more and more as he grows older and will give it up only when nature sets the stop sign at last against him, and he will then prove that Robert Louis Stevenson was right when he said of the doctor, "He is the flower of our civilization; and when that stage of men is done with, only to be marvelled at in history, he will be thought to have shared but little in the defects of the period and to have most notably exhibited the virtues of the race."

BLOOD TRANSFUSION

By
R. M. DACUS, JR., M.D.,
Greenville, S. C.

In 1616, William Harvey discovered the circulation of the blood, and in 1665, Richard Lower and Jean Denys of France were the first to successfully perform transfusion. The former experimented with dogs, and the latter performed the first human transfusion. They employed anastomosis of an artery to a vein with a cannula. Because of the large number of deaths, the procedure was pronounced illegal by the supreme court of France, and transfusion was abandoned until 1818 when revived by Blundell of England. Following the introduction of normal saline solution for intravenous therapy in 1875, the employment of blood transfusion was gradually abandoned in favor of saline.

At the beginning of the 20th century, the two chief dangers associated with blood transfusion, hemolysis and clotting, were rapidly being overcome. The phenomenon of the agglutination of human red cells by human serum was first pointed out by Landsteiner, and in 1901, he discovered three blood groups in humans. In 1907, Jansky discovered the fourth group and classified human blood. Moss confirmed his work. The microscopic test was now being employed to determine compatibility of the donors' blood and the number of deaths from transfusion was greatly reduced.

Just prior to the World War, Carrel and Crile perfected the suture of blood vessels and popularized transfusion by the anastomosis of artery to vein. Crile employed a cleverly devised cannula.

Soon afterward, Kempton and Brown introduced their paraffin-coated tubes to prevent blood from clotting when carried from donor to recipient, and Lindman began the multiple syringe method. The syringe became so popular that it practically did away with all the direct methods. Unger, in 1915, introduced a very ingenious apparatus consisting of a stopcock which alternately connected a syringe for blood from donor to recipient.

Read before the Greenville County Medical Society, December 1935.

Up to this time, the success of most methods depended on the rapid transference of blood from donor to recipient in less than normal coagulation time. In 1915, Lewisohn introduced the citrate method in which he mixed the donor's blood with sufficient sodium citrate to prevent coagulation, and then gave the blood slowly as one gives i. v. saline. This method became very popular because of its extreme simplicity. Inexperienced operators could now do transfusions where it was previously limited to skilled surgeons.

In more recent years, several types of syringes have been perfected by Scannell, Jube, Head, and others, by which blood can be rapidly transferred from donor to recipient almost as easily as with the citrate method. Now, almost anyone who can perform veinpuncture can do a transfusion, and it is no longer looked upon as a complicated procedure.

At the present time, the methods most generally used are the citrate method and the syringe methods of Scannell, Jube, and Head. The citrate method is rapidly being replaced by the simple syringe methods. The Scannell is the one most widely used. In Greenville, the majority of the surgeons find the Jube syringe simpler and quite satisfactory. At present, the internes at the General Hospital are using the old multiple syringe method. In Cleveland, the paraffin tubes of Vincent are still in use. At least four persons are necessary to perform a transfusion by this method, and the vein must be dissected out in both the donor and the recipient.

Most authorities agree that the whole-blood method is preferable to citrated blood. In this method, there is less likelihood of reaction, and it is possible that the blood itself has a more beneficial effect. The most ardent exponents of the whole blood method declare that there is never a time when citrated blood is equal in therapeutic value to unmodified blood. On the other hand, Lewisohn, who introduced the citrate method, believes that citrated blood has the same clinical value as whole blood, not only in cases of shock and hemorrhage but in every form of blood disease.

Sod. citrate in the dosage used is not toxic unless the patient has an alkalosis or a low

serum calcium, then a condition simulating tetany may be produced. Coagulability of citrated blood is restored soon after transfusion by the union of the citrate with the calcium ions in the blood serum. Sod. citrate, being a combination of a strong base with a weak acid, produces a distinctly alkaline solution, and so tends toward alkalosis. To overcome this type of reaction, Minot and Dodd suggest the use of i. v. calcium gluconate when the citrate method is used.

Reactions with the citrate method occur in from 20 to 60 percent as compared to 10 to 20 percent with whole blood. These reactions are generally characterized by chills and temperature elevation as are sometimes seen after i. v. glucose. They are not caused by the citrate, but are very likely due to some foreign protein or to chilling of the blood. In the citrate method, there is a much greater possibility for contamination as the blood comes in contact with the air and has to be stirred in a graduate to prevent coagulation. It must also be filtered through gauze, being transferred from one receptacle to another before being given i. v. Lewisohn showed that, by boiling the apparatus in sodium hydroxide and using triple distilled water, reactions can to some extent be reduced in number. The only advantage that citrated blood has over whole blood is the ease with which it can be given. The technique is simpler for the inexperienced physician.

More serious reactions than chills and fever may follow transfusion. They are practically always due to the use of incompatible blood. They are: petechia, hemoglobinuria, urticaria, jaundice, and allergic reactions. Convulsions, coma, and death may result. At the beginning of a transfusion, any one of the following danger signs should stop the transfusion: facial erythema, cyanosis, feeling of tightness in the chest, dyspnea, precordial pain, short dry cough, epigastric pain, nausea and vomiting, or petechiae. The typing and matching of blood should be done only by an experienced and competent person. It is not necessary to type the recipient or donor if the bloods are cross matched. Even if typed, the blood should be cross matched. That is: the cells of the donor should not be agglutinated or hemolized by the serum of the recipient, nor should the serum of the donor agglutinate the cells of the recipient. Some clinics only match the donors' cells with the recipient's serum; you may or may not get a reaction if the donors' serum agglutinates the recipient's cells. This practice is dangerous.

Indications for transfusion: Acute anemia from hemorrhage is an emergency indication for transfusion. Blood volume can be temporarily restored by i. v. saline or gum acacia, but only blood can restore the oxygen carrying capacity. A rapid reduction of blood volume to a point below 75 percent of normal leads to serious symptoms. Conditions producing acute anemia from hemorrhage include: traumatic injuries, postpartum hemorrhage, ruptured ectopic pregnancy, incomplete abortion, pulmonary hemorrhage, and bleeding peptic or typhoid ulcers.

In many cases of chronic secondary anemia, transfusion is often indicated. For example, anemia following loss of blood in small amounts over a long period of time, as with fibromyoma of the uterus or bleeding hemorrhoids. Anemia may be secondary to chronic suppurative conditions, such as osteomyelitis, empyema, or pelvic peritonitis, or it may be secondary to a malignancy. Transfusion is often a valuable preoperative procedure. Not even a minor operation should be performed with the hemoglobin below 50 per cent. In septicemia, the only indication for transfusion is anemia. Attempts to supply leukocytes and antibodies by transfusion have failed.

In several blood dyscrasias, transfusion is indicated. In purpura hemorrhagica, transfusion may be necessary to raise the platelet count of the blood to stop hemorrhage. The numerical increase in the blood platelets is often of very brief duration. The life of the blood platelet is about four days, and for this reason, frequent transfusion may be necessary. In hemophilia, the blood platelets are of defective quality. In this disease, moderately large transfusions may be necessary to supply sufficient platelets with normal coagulative power to stop hemorrhage. In hemorrhagic disease of the newborn, and in obstructive jaundice, transfusion may be indicated to supply fibrinogen, calcium, or other humoral elements necessary for

proper coagulation. In severe hemolytic jaundice and in the leukemias where there is marked anemia, transfusion is also indicated.

The amount of blood given depends on the condition for which transfusion is done. Acute hemorrhage requires a relatively larger amount of blood, from 500 to 800 c. c. being given in one or two transfusions. The average amount given at a single transfusion is 400 c. c. Donors can spare 400 to 500 c. c. without ill effect. Benefits from blood transfusion are usually greater than one would expect from simple replacement. This is attributed in part to stimulative action on hemapoiesis. Some cases of long-standing chronic anemia seem to become established on a low level with little blood production. In these cases, transfusion may bring about sharp improvement with a renewal of hemapoiesis. It is believed that small transfusions have a stimulative action on the bone marrow while large ones may depress it. Small transfusions of 100 to 200 c. c. are gaining in popularity.

In children, the amount of blood depends upon the weight of the child and the degree of dehydration. Children are often transfused for nutritional disturbances such as athrepsia and anhydremia. Dehydrated patients can be given larger amounts of blood than those with normal blood volume. Infants tolerate a relatively larger amount of blood than older children. A rule similar to Young's Rule for drug dosage may be used. It is: Weight of the patient divided by the weight plus 40 multiplied by 400 c. c. equals the amount to be given.

In children, transfusion may be difficult because of small veins. This can generally be overcome, however, if the great saphenous vein is exposed at the ankle by an incision just medial to the internal malleolus. The distal end of the vein is ligated and the vein cut half into with sharp pointed scissors. A cannula is then introduced into the vein and tied in place. Blood then can be given either by the direct or citrate method. In infants, blood may be given into the longitudinal sinus by puncture through the anterior fontanel or the jugular vein may be used. If both of these methods fail, blood may be given intraperitoneally or intra-muscularly. Blood given intraperitoneally must be typed. It may be citrated or whole blood. Intra-muscular blood need not be typed. Experiments in which bird blood was injected into the peritoneal cavity of dogs proved that a portion of the blood appears in the circulation soon after injection. Intra-muscular blood may be given daily until a suitable rise in blood elements occur. It will reduce coagulation time and has been used to stop hemorrhage from mucous membranes. Da-Costa has noted a rise of 5 per cent hemoglobin and 400,000 red cells three days after the injection of 20 c. c. of blood.

Auto-transfusion has been successfully employed in cases of intra-abdominal hemorrhage and in hemothorax. The blood is taken from the abdomen or thorax, filtered through gauze, and injected intra-venously. The blood may or may not be citrated. Ruptured ectopic pregnancy is a frequent condition that affords an opportunity to employ this procedure.

Dr. Judine, a Russian physician of Moscow, has recently experimented with transfusions of blood from dead persons. He finds that blood remains viable and unclotted up to eight hours after death. He draws the blood soon after death, citrates it, and after proper typing and serologic examination, gives it intravenously to patients in need of transfusion. Citrated blood may be kept on ice for many days and warmed just before being given.

Transfusion now has a definite place in medicine as a therapeutic agent. Advances have also been made in liver and iron therapy in treating certain forms of anemia, most notably pernicious anemia and hypochromic microcytic anemia; so that the physician must consider each case carefully to determine when transfusion is really indicated.

The citrate method is an accepted method of transfusion, being used exclusively in many large clinics; however it is a more dangerous procedure than the whole blood method because there is much more liklihood of contamination and reactions occur more frequently with its use. On the other hand the citrate method is simpler and easier to perform.

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RIDGE MEDICAL SOCIETY MEETING

The Ridge Medical Society met the nineteenth of December, 1935, at seven o'clock in the evening with a good attendance including our visitors, Dr. George McCutchen of Columbia and Dr. W. P. Turner and Dr. C. H. Blake of Greenwood.

Dr. W. P. Timmerman reported a case of infection in a parturient woman twenty years of age who has seven living children and who within three days after delivery became seriously ill.

She was examined by five other physicians.

She had severe pains in each groin and right leg with evidence of inflammation and after two months an abscess formed above pubis which was incised and after three months of illness seems about well.

This case elicited considerable discussion by various ones.

Dr. Blake reported a case of haematoma of the vagina.

Dr. Wise reported a case of a man with an abscess above the pubis.

Dr. Turner reported a case of appendicael abscess in the femoral ring.

Dr. King reported a case of puerperal infection which ended fatally.

Dr. Ballinger reported a case of forceps being left in the abdomen during laparotomy.

Dr. Turner made an interesting address on kidney lesions with their varied manifestations, symptoms, treatments, results and the tests for making the diagnosis.

This elicited much discussion and commendation.

Dr. McCutchen gave an interesting and instructive address on hyperinsulinism, with special emphasis on the diagnosis, cause and treatment.

He was highly commended for his address.

We regret the continued indisposition of Dr. J. D. Waters of Saluda, S. C.

Supper was served in The Batesburg Hotel where good fellowship reigned and much merriment ensued.

Dr. Blake spoke of his early association with our society and highly commended it for its endeavor to secure sketches of various doctors who have lived in this section.

He lauded too highly the secretary.

Dr. R. H. Timmerman told the society that Dr. John Gorrie of this state was the first to make artificial ice successfully.

Dr. Turner said that Dr. Gorrie once lived in Greenwood.

It was also stated that Dr. J. Walter Hill of Edgefield was the first doctor in South Carolina to successfully perform the Cesarian operation. The mother and child both lived and the operation was performed in the woman's home.

The Ladies Auxiliary was delightfully entertained in the home of Mrs. E. C. Ridgell.

Mrs. Dr. Geo. McCutchen of Columbia was one of the guests.

W. P. Timmerman, Secretary.
F. G. Asbill, M.D., Acting President.

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FEBRUARY, 1936

PROGRAM FOR GREENVILLE MEETING APRIL 21, 22, 23 ABOUT COMPLETED

A meeting of all of the local committees, the Program Committee and the Officers of the State Medical Association, has just been held in Greenville and all of the arrangements for the coming meeting considered.

The scientific program has been filled and so announced by Dr. George R. Wilkinson, Chairman, Greenville, S. C. For several years the plan has been to limit the number of papers on the program to about fifteen exclusive of invited guests and addresses of officers. Every effort has been made to provide a program of wide general interest to the medical men of South Carolina. The specialties have a place but for the most part the program is designed to enrich the knowledge of the general practitioner. Dr. George W. Crile of Cleveland, Ohio, Professor of Surgery Emeritus, Western Reserve School of Medicine will deliver the address in Surgery. Dr. Crile is one of the world's most famous men. The address in Medicine will be delivered by Dr. W. B. Porter, Professor of Medicine at the Medical College of Virginia, Richmond. Dr. Porter is an internist well known throughout the country.

The entertainment features this year will reflect the splendid hospitality of the city of Greenville. Owing to the death of our President during the Christmas Holidays the President's reception and ball will not be held. There will be a dinner on the evening of April 22 for all the members of the Association. At this dinner a speaker of note will be invited to address the Association on some subject of commanding interest. This dinner will take the place of private dinners by individual members of the Greenville County Medical Society.

The Woman's Auxiliary will have their own programs as usual and a large attendance is expected at their meetings.

The Poinsett Hotel will be Headquarters for the Association. Among the other Hotels are the Imperial and the Ottaray. The total attendance should be about five hundred including the Woman's Auxiliary and the Public Health Association.

THE SIMS MONUMENT DESECRATED

It was noted in the public press recently that the monument erected by the South Carolina Medical Association, the Woman's Auxiliary and the State of South Carolina on the State House grounds in Columbia as a lasting memorial to the great fame of Dr. J. Marion Sims had been damaged by vandals. The Secretary-Editor and one of the past Presidents of the

Association visited the monument to observe the damage. It was found that the eyes had been gouged out and some of the lettering on the monument destroyed. We are advised that prompt action will be taken to restore the monument to its original beauty.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"REDUCTION OF HERNIA EN MASSE"

The reduction of an incarcerated hernia generally removes the danger of strangulation which there-to-fore was imminent. That this is not always the case it is well to bear in mind, for the reduction may occur in such a manner that strangulation almost invaraiably ensues unsuspected under cover of the abdominal wall. This is known as reduction en masse. While not common, it occurs sufficiently often to warrant our being familiar with it so as to recognize it when present. In this regard it will be well to review an article by Dr. Louis H. Nason and Dr. Charles G. Mixter in which they report five cases of their own, drawing some conclusions from them. (J.A.M.A. 105:1675, Nov. 23, '35).

The reduction of hernia en masse occurs more commonly in males, on the right side, and in the inguinal rather than the femoral region. It is important to note that for such a false reduction to take place it is not necessary that the attempts at taxis be forceful. In one case the hernial mass disappeared spontaneously and in another the patient himself made the "reduction" with little effort. The sac with its contents is forced within the abdominal cavity between the muscle layers and the parietal peritoneum into the so called properitoneal space. For such a situation to take place several factors must obtain. The sac must be sufficiently developed to admit abdominal contents and its neck not so large as to permit their easy escape. The sac must lie loosely in the hernial canal. The neck of the sac and the surrounding peritoneum must have sufficient mobility so as to permit their being displaced allowing the reduced mass to occupy a properitoneal position.

The effect of such a false reduction is almost invariably strangulation of the contents of the sac. This may follow immediately or only after a few days. The picture is misleading unless the condition is suspected, as there is no mass in the hernial region. The case becomes one essentially of strangulation and obstruction of the small intestine. The treatment is by operation through an abdominal incision.

MARLBORO COUNTY MEDICAL SOCIETY

The Marlboro County Medical Society held its Annual New Year's Meeting and Banquet Friday afternoon, January 10, 1936, at 5:00 o'clock in the Masonic Temple, Bennettsville, S. C. The following program was carried out:

1. The New Year and the Doctor—Dr. Edgar A. Hines, Sec. S. C. Med. Assoc., Seneca, S. C.
2. Submucuous Fibrosis in the Urinary Bladder—Dr. William R. Barron, Columbia, S. C.
3. Riedel's Thyroiditis—Dr. Roy B. McKnight, Charlotte, N. C.

Dinner in Banquet Hall.

4. Newer Methods in the Study and Treatment of Food Allergy — Dr. Warren T. Vaughan, Richmond, Va.

Bennettsville, S. C.

Dr. D. D. Strauss, Sec.

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

Agranulocytosis frequently occurs in such a severe form and in such numbers that an insight into its etiology with a view of decreasing its incidence is of great value.

An article in the Journal of the American Medical Association by Drs. Kracke and Parker gives much of value on the etiology. (The Relationship of Drug Therapy of Agranulocytosis; Drs. R. R. Kracke & F. P. Parker; Jour. A. M. A., Sept., 1935, p. 960).

"Agranulocytosis may be defined as a disease in which essentially, there is a marked diminution, or total absence, of the granulocytes of the peripheral blood, which is followed by loss of cellular resistance and this, in turn followed by infectious processes of various types. Although the basic pathologic change is a neutropenia of the peripheral blood, the underlying pathologic process in the bone marrow has not been completely worked out. It seems, however, that there is a hypoplasia of granulocytic elements in the bone marrow and it is our purpose in this paper to determine from available evidence whether or not these changes are caused by the use of certain drugs."

The etiology was discussed from a bacteriological viewpoint and from the viewpoint of a dietary deficiency, as of Vitamin G.

Menstrual coincidence, was thought to be a factor but it was found that the taking of drugs, as Cibalgine for the menstrual pain was the real cause. But they discuss the etiology mostly from the viewpoint of chemicals and drugs. As to the chemicals, industrial benzene poisoning is a frequent cause; as to drugs, they mention many; as:

Acetphenetidin, amidopyrine, nearsphenamine, certain gold salts; as crisalbine, dinitrophenol, neotibosan, acetanilid, antipyrine, aspirin, quinine, and arsenical compounds (but it should be remembered that the organic arsenical products are composed mainly of double benzene ring structure). They doubt the potency of some, as aspirin; so they say that in a summary of the cases of agranulocytosis, following the administration of drugs, it seems that at least four different classes of drugs can be incriminated. The are amidopyrine, dinitrophenol, gold salts, and organic arsenical compounds.

In these drug cases a certain susceptibility to the adverse action of the drug must be assumed to account for the small number of people affected in proportion to the large number of people that use the drugs. But certain of the oxidation products of the incriminated drugs have a depressing effect in the bone marrow and are thus capable of producing granulocytopenia. Hetz attributes the injurious action to the pyrazolon group, which is found mainly in amidopyrine, and it is from chemical reasons likely to be an erythropoietic depressant. Others believe that it is the benzene ring in some drug that causes the agranulocytopenia, from the ease of exidation of the drug. The inclusion of barbiturates does not seem to be justifiable in spite of cases reported by the Mayo Clinic.

Since amidopyrine is so often the causative factor of agranulocytopenia, some recommendations seem in order and have in places proved to be of value.

"It seems desirable that amidopyrine should be dispensed only by physicians in nonrefillable prescriptions, so that this danger of agranulocytosis may be largely removed from the unprotected public. Furthermore, it seems that every physician should prescribe amidopyrine with caution and he should not follow the careless custom of giving a patient a prescription for relief of pain with such indefinite directions as to have it refilled whenever the patient chooses to do so.

Amidopyrine is admittedly a valuable drug but the leukocyte count should be checked from time to time to determine whether or not there is bone marrow depression."

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 303 (29642, Dec. 6, 1935)

Case of Drs. Richards and Hoshall

Student Rutledge (reading):

A Negro male, stevedore, age 24 yrs., admitted 6-20-35, died 10-25-35.

Onset in March 1935 with sharp intermittent pains in lower lumbar region, not affected by rest although worse on exertion. In May developed less severe pains in right hip, which radiated down the anterior portion of the thigh to the knee. Unable to lie on right hip due to pain. Right knee has been sore and swollen since onset. Has had a high fever almost every day since onset, and has lost about 25 lbs., although the appetite is good. No previous joint complaints. Past Illnesses: Penile sore (1926), Neisserian infection (1928). Had tonsillitis "once." No history of pleurisy, pneumonia, or tbc. Review of the systems reveals only constipation and nocturia (3-4). Family History: "No tbc., heart disease or insanity."

Examination: A thin and undernourished male, temp. 101, pulse 100, resp. 24 per minute, B.P. 100-70. Depigmented areas noted about face. Eyes, ears, nose negative. Teeth carious. "Throat red." Epitrochlear glands palpable. Chest: Expansion equal. Breath sounds distant. Few fine rales in mid-portion of rt. lung anteriorly, disappearing on deep breathing. Scoliosis of left side ("Probably due to fixation of structures around right hip"). Mediastinum neg. Heart: Apex in 5th interspace, 2 1-2 inches from midline. Regular in rhythm, rate increased, no murmurs or arrhythmias. Abdomen: flat, no organs or masses palpable. No penile discharge. General atrophy of muscles of lower extremities, more on right. Rt. leg flexed. Pain on palpation of rt. hip, over greater trochanter. "Flexion of leg of 130 degrees. Limitation of abduction, adduction and flexion of thigh. Some pain on motion of patella and structures around knee joint. No effusion noted. Tenderness along rt. femur." Transient ankle clonus on left, no other abnormalities of reflexes.

Lab: Urine completely neg. (2 exams.) except for 1-5 leukocytes per HPF. Blood (6-20-35, 10-3-25) Hb. 55 per cent(D), 50 per cent(T); WBC 6850, 20,000; polys 73 per cent, 84 per cent; lymphs 27 per cent, 15 per cent; achromia, anisocytosis, 1 plus; RBC _, _. Blood Kolmer and Kline 4 plus. Culture "from rt. femur" (7-25) staphylococcus present. Culture "from rt. hip joint" (7-11), (7-17) neg. Blood culture (6-25) neg. X-ray of chest, lumbo-sacral spine, pelvis (6-21): See chart. Mantoux 1 plus. Biopsy of femur (10-3) "Osteomyelitis of femur."

Course: Temp. showed daily afternoon rise, usually to 103, with drop during night, usually but not always to normal. This continued relatively unchanged until day of death when it fell gradually to 95 just before death. Pulse followed temp. closely. Resp. 20-36, showing no consistent tendency to rise or fall. Was placed on Bradford frame, skin traction applied. Hip-joint opened and drained on 7-11; thick greyish pus obtained. No subsequent improvement. On 7-25 was incised again, drill holes placed in trochanter from which "purulent material" was obtained. Decubitus ulcers appeared over sacrum in July, continued. No improvement. Moderate drainage from incisions. Incised again on 9-25 and 10-3, with no subsequent improvement. Given 3 blood transfusions. Gradually became weaker, decubitus ulcers enlarged and became deeper. Became unable to swallow a few days before death, gradually expired on 10-25-35.

Dr. Robert Wilson, Sr. (conducting): I understand that you all saw the autopsy, so I wouldn't be surprised if we have a unanimous verdict today. Mr. Keels, will you open the discussion?

Student Keels: The history of gradual onset of symptoms referable to the hip joint, with progressive limitation of motion, and with fever, suggests tuberculosis of the hip-joint.

The family history is negative for tuberculosis, but we cannot attach any importance to that; the important thing is, was there exposure to the tubercle bacillus? The answer is not recorded. The joint was first incised and drained on July 11th. Two weeks later, the first culture was taken. That the staphylococcus was recovered at that time is not surprising; secondary infection had then had time to become established, and an osteomyelitis of pyogenic nature was probably present at that time, as well as the older tuberculosis. When the biopsy was taken, almost three months after the original operation, it is only natural that the condition should then appear to be an osteomyelitis of the usual, non-tuberculous form.

I have read that 80 per cent of the deaths in cases of bone tuberculosis are due to a terminal miliary tuberculosis, so, at least on the basis of probabilities, that is my opinion as to the method of exitus, although there is little on the chart to suggest it. On the other hand, pyogenic infection, either from the secondary pyogenic infection of the hip, or from the numerous decubitus ulcers, could have given a septicemia as the immediate cause of death.

Dr. Wilson: Mr. Settle, do you agree?

Student Settle: Yes, I agree with Mr. Keels in the main, but I do not believe that secondary infection with septicemia was the mode of death. I believe that he died from generalized miliary tuberculosis. He had been progressively losing weight, had become quite anemic, and his temperature curve had followed the course that is rather typical for miliary tuberculosis. His chest findings on admission were also slightly suspicious.

Dr. Wilson: But couldn't the weight loss, the fever and the anemia all have been caused by the secondary infection?

Student Settle: Yes, I guess they could have.

Dr. Wilson: Mr. Gasner, can you add something?

Student Gasner: I believe that the case for secondary infection is stronger than has been made out. The terminal leukocytosis would be hard to explain on any other basis. Can we see the x-ray now?

Dr. Lynch (demonstrating x-rays and reading exerpts from the x-ray reports): "There is a definite clouding of the right hip-joint, but no definite bone destruction has taken place as yet. There is also slight irregularity in the shape of the 4th and 5th lumbar vertebrae, but as there is no evidence of bone erosion, this is taken to be a congenital anomaly. The chest is clear."

Dr. Wilson: With the x-rays now before you, would anyone like to add something further, or to change an original impression? (No answer) Dr. Prioleau, would you care to discuss the case?

Dr. Prioleau: The diagnostic part of the case seems to me to have been adequately covered, but I would like to call your attention to the bed-sores. In many cases of joint disease, not alone the tuberculous ones, bed-sores occur, and they may even become then the most important and dangerous part of the case, as has been frequently demonstrated at these conferences. All precautions should be taken to prevent their occurrence in such cases, and once they have appeared, they should be treated.

Dr. Lynch: No one has commented on the symptoms in the knee.

Dr. Wilson: Mr. Gasner, what do you think of that?

Sudent Gasner: I think that must have been a referred pain. On examination, the joint was not found to be swollen.

Dr. Lynch: And wouldn't someone like to explain why he couldn't swallow for the last few days?

Dr. Wilson: Mr. Cantey, you explain that.

Student Cantey: I think he was just so run down he couldn't swallow, or maybe he didn't want to. That is not uncommon on the last day or two before death from any illness.

Dr. Wilson: The working diagnosis recorded on the chart by the examiner who saw him on admission was tuberculosis of the hip. Later that was changed to acute arthritis of the hip.

Student Rutledge: I think the diagnosis was changed on the basis of two completely negative results with the Mantoux test, and a subsequent one-plus test, as recorded on the abstract.

Dr. Wilson: The Mantoux test is not uncommonly negative in a case of overwhelming tuberculous infection.

Dr. Lynch: I am sorry that Dr. Hoshall could not be here today to discuss his case, but he has been detained in the dispensary.

I do not doubt that the biopsy report on this case was one of the factors to cause the diagnosis to be changed from tuberculosis. And that brings out one of the points of this case: any laboratory report should be considered in the light of the pertinent clinical data at hand. In such a case, with an open, draining sinus communicating with the bone for three months, nothing else could have been anticipated from a biopsy, unless taken very deeply; a biopsy taken at the first operation would probably have revealed the true condition.

There was an extensive tuberculosis of the head of the femur, with erosion into the joint. As you can see here (demonstrating autopsy specimens), the articular surface is completely eroded away, and the surface of the bone left appears fussy and mossy. There is extensive destruction of this area, and considerable granulation tissue formation. There is an apparent shortening of the neck of the femur, from erosion of the head as a result of friction; this is also quite characteristic. The acetabulum was similarly eroded, and there was extensive destruction of the margins of the joint. The base of the acetabulum was completely eroded through.

Such a condition is necessarily a blood-borne infection. The bacilli usually lodge in the bone proper, at the epiphysis, and then, as the head of the bone becomes caseous, the joint becomes involved, and later still, the other bone composing the joint. Occasionally tuberculosis is primary in the joint itself, but that is quite rare.

The oldest tuberculous lesion in this case was apparently in the mediastinal and mesenteric lymph nodes, and hence the original infection may have been either via the respiratory tract or the intestinal tract. There were no recognizable lesions of the parenchyma of the lungs or in the intestines at the time of death. In the bone tuberculosis of children, the bovine bacillus is commonly the infecting organism, rather than the human bacillus. Since this organism almost always enters by the intestinal tract, it is not uncommon to find the mesenteric lymph glands showing the oldest lesions. In this case, caseation is more evident microscopically than is the cellular response, and that inclines me somewhat towards the possibility of a bovine infection in this case, that appearance being the usual one in bovine tuberculosis.

This man died of a generalized miliary tuberculosis. I don't know whether those of you who argued for miliary tuberculosis did so because you remembered the autopsy or not, but you should have been able to support your case better. A patient who has tuberculosis, and who dies during the course of active tuberculous infection, usually dies from tuberculosis, and that usually in a miliary form, at least in the last analysis. Even cases of chronic tuberculosis commonly terminate in this way, as you saw in an interesting autopsy this morning. Of course secondary infection could have been the fatal factor here, but that would have been much more unusual.

Student Gasner: How do you explain the pain in the knee?

Dr. Lynch: There was nothing in the autopsy to explain it.

Dr. Chamberlain: Pain in the knee is given by the older authors as one of the earliest symptoms of tuberculosis of the hip-joint. It is thought that the pain is a referred pain, probably transmitted along the saphenous nerve.

Dr. Wilson: I often wonder if we couldn't come much nearer the correct diagnosis than we do by going into the history in more detail. I always note that when the symptoms are all referable to one area, there is a tendency to deal skimpily with more remote parts of the body. In this case, the suspicion of tuberculosis, that was evidently in the examiner's mind, should have brought careful questioning as to respiratory symptoms, possibly at some remotely distant time. With such information at hand, it would probably have been very hard to convince the examiner that the condition was not tuberculous.

WOMAN'S AUXILIARY

SOUTH CAROLINA MEDICAL ASSOCIATION

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Dr. E. A. Hines ..... Seneca, S. C.
Dr. William A. Boyd ..... Columbia, S. C.
Dr. Kenneth Lynch ..... Charleston, S. C.
Dr. J. W. Bell ..... Walhalla, S. C.

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REPORT TO THE WOMAN'S AUXILIARY OF THE SOUTHERN MEDICAL ASSOCIATION

Greetings from South Carolina the state which is at present busy trying to double its Student Loan Fund!

Four years ago the Board realized that a common objective for which all units could work would probably serve better than anything else to maintain the interest that sometimes wanes after organizations, so the humane project of building up a fund for the use of doctors' sons and daughters who lack sufficient money to complete a course at Medical College was begun. The work is so very worth while and has met with such signal success in South Carolina that I should like to outline our schedule of requirements for the use of the fund hoping some other states will adopt a like plan.

Each Auxiliary is assessed $1.00 per paid up member yearly in addition to any other donation which it cares to make. The applicant for the use of the fund may secure $250 a year for four years, without interest, upon presenting proper credentials as to character, scholastic records, etc., and a note bearing an acceptable endorser. After graduation and internship the recipient agrees to begin payment on the loan by monthly installments, a course which one beneficiary is following at this time.

At present there is a sufficient sum on hand for the founding of one scholarship and the State President and Student Loan Fund Chairman, Mrs. L. O. Mauldin of Greenville have high hopes of so materially increasing the amount this year that we shall be able to establish a second scholarship by September.

In addition to this drive, the State Organization Chairman has placed applications before several Medical Societies asking permission to expand, and more important still, is trying to keep alive the Auxiliaries already formed. It is very discouraging to labor over the organization of a unit only to have the joy of expansion offset by the death of an established branch, a situation which is constantly arising in this state.

Preparation of biographies of deceased doctors of South Carolina has progressed with much interest and while we anticipate that considerable time will be required for the completing of necessary data, we expect when it is completed to publish the material in book or pamphlet form.

We appreciate the privilege of contributing this letter and hope to have real news when the time comes for presenting the next one.

Our State Convention will be held April 21-22-23 in Greenville.

With best wishes for a successful Auxiliary year to all states affiliated with the Auxiliary to the Southern Medical Association, I am,

Most Cordially,

Mrs. Clarence E. Owens, President, of the Auxiliary to the S. C. Medical Association.

Mrs. E. Clay Doyle, Seneca, S. C., Chairman of Publicity of the Auxiliary to the S. C. Medical Association.

BOSTON MEDICAL LIBRARY

SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

Pediatric Training Yesterday and Today—D. L. Smith, Spartanburg—Sou. M. J. 28 Dec. 1935—1138. A sketch of the development of present day facilities for training in pediatrics, with a description of the Southern Pediatric Seminar held at Saluda, N. C.

John Gorrie: H. M. Taylor, Jacksonville, Fla. Sou. M. J. 28 Dec. 1935—1075. The life of a Charlestonian who later became a Floridian, inventor of an ice-making machine and father of modern air-conditioning.

Well Leg Traction as an Aid in the Correction of Some Stereotyped Orthopedic Deformities —J. W. White, Greenville. Sou. M. J. 29 Jan. 1936—45. A discussion of principles involved and the application in various conditions.

An Instrument Facilitating Use of the Flanged Nail in Treatment of Fractures of the Hip. —J. W. White, Greenville. J. of Bone & Joint Surgery. 17 Oct. 1935—1065. A description of this simple instrument.

The Football Knee—J. W. White, Greenville. The Journal-Lancet 55 Dec. 1, 1935—773. The author finds this due usually to damaged cartilage or free bone which has been scaled off, and discusses treatment, with a leaning well to the conservative side.

Experiences with Well Leg Traction Apparatus —J. W. White, Greenville. Sou. Surg. 4 Dec. 1935—396. An illustrated article describing the use of this method in scoliosis, dislocation of one innominate bone, dislocated hips, ankylosis of the hips, intertrochanteric fractures, fractures of the femoral shaft.

Femoral Shortening for Equalization of Leg Length—J. W. White—Greenville. J. of Bone & Joint Surg. 17 July 1935—597. Illustrated description of technique and favorable results in a series of 45 cases.

Enteric Cysts—O. B. Mayer, Columbia. Ann. Int. Med. 9 Dec. 1935—797. An illustrated case report of this rare condition in a twelve-year old boy who recovered from operation.

Infections of the Terminal Digital Phalanx— W. H. Prioleau, Charleston. Sou. M. & S. 97 Mar. 1935—127. A short discussion of diagnosis and treatment.

NEWS ITEMS

Rates of Greenville Hotels for State Association Meeting

The Poinsett:

Single rooms—$2.50 to $3.50 per day.
Double rooms—$3.50 to $6.00 per day.
All rooms have private bath.

The Ottaray:

Single, without bath—$1.50.
Single, connecting bath—$2.00.
Single, private bath—$2.25 and $2.75.

The Imperial:

Single without bath—$1.50.
Single with bath—$2.00 and $2.50.
Double without bath—$2.50 each person.
Double with bath—$3.00 and $3.50 each.
Double with connecting bath—$2.50 and $3.00 each.

Dr. Kenneth M. Lynch, Charleston, has been appointed a member of the Council of the Southern Medical Association from South Carolina for a regular Council term of five years, the appointment having been announced recently by the President, Dr. Fred M. Hodges, of Richmond. Dr. Lynch succeeds Dr. Frank H. McLeod, of Florence, who having served the constitutional limit, was not eligible for reappointment.

SOCIETY REPORTS

MINUTES OF THE REGULAR ANNUAL MEETING OF THE MEDICAL SOCIETY OF SOUTH CAROLINA, HELD ON TUESDAY EVENING, DECEMBER 10th, 1935, at 8:30 O'CLOCK, AT THE FORT SUMTER HOTEL

The meeting was called to order by the President, Dr. Francis B. Johnson.

The Roll was called, there being fifty-three members present.

Guests included members of the faculty of the Medical College, members of the Medical Corps of the Navy Yard and Fort Moultrie, and visiting physicians.

The Minutes of the meeting of November 26th were read and confirmed.

The Secretary moved that in view of the fact that the second meeting for December falls on Christmas Eve, it be dispensed with.

This was seconded and carried.

The election of Officers was then taken up, with the following result:

President: Dr. W. Atmar Smith;

Vice-President: Dr. J. Austin Ball; Drs. J. J. Ravenel and Hillyer Rudisill having requested that their names be withdrawn.

Secretary-Treasurer: Dr. Joseph I. Waring.

Librarian: Dr. W. C. O'Driscoll.

Commissioner of Roper Hospital: Dr. G. McF. Mood;

Member Board of Censors: Dr. Edward Rutledge;

Delegate to the State Association: Dr. Robert Wilson, Jr.

Alternates: Drs. P. G. Jenkins and Paul W. Sanders withdrew their names, and the following were elected: Drs. John C. Beckman, A. J. Buist, Jr., T. H. Martin, E. W. Townsend, I. R. Wilson, Jr.

Honorary Fellow: D. J. Sumter Rhame.

Dr. F. G. Cain stated that a vacancy had occurred in the office of Attorney for the Society as a result of Mr. George H. Moffett having relinquished his practice; and moved that the Secretary communicate with Mr. Moffett and thank him for his services in the past, and explain to him that his position will have to be filled.

Dr. Edward Rutledge moved for the election of a new attorney, and nominated Mr. Arthur R. Young.

Dr. Jervey Ravenel nominated Mr. Thomas P. Stoney.

Dr. A. J. Buist suggested that due to the fact that Messrs. Hagood, Rivers & Young were handling letters for the Society in connection with the Ross Estate, and were familiar with the Society's affairs, he believed that it would, therefore, be better to elect the firm to act as legal representatives of the Society.

Dr. Rutledge accepted Dr. Buist's nomination of the firm of Hagood, Rivers & Young as a substitute motion.

Dr. Ravenel then nominated the firm of Stoney, Crossland and Pritchard, withdrawing his previous nomination of Mr. Stoney.

Ballots were cast, and the firm of Hagood, Rivers & Young were elected as Attorneys for the Society.

Dr. Mood moved that in advising this firm of their election as the Society's legal advisors, that they be requested to have Mr. Young handle the affairs of the Society.

The President then had the newly elected officers conducted to their chairs. He then spoke briefly of his pleasure in serving as President, and reviewed the chief events of his term, particularly the discussion of Health Insurance and the visit of Dr. Bierring.

Dr. O'Driscoll moved that the Secretary send a letter of appreciation to Dr. Johnson.

This was seconded and carried.

The President, Dr. Smith, spoke a few words expressing his pleasure in taking his new office.

The meeting then adjourned.

J. I. Waring, M.D., Secretary.

NEWS ITEMS

PROGRAM OUTLINE OF THE SOUTHEASTERN SURGICAL CONGRESS, NEW ORLEANS ASSEMBLY

March 9-10-11, 1936—Following Mardi Gras

If you have never attended one of these assemblies you will have missed something. The New Orleans assembly should be the best one. Don't miss it. Three full days. Doing something every minute. Mid-day round table discussions — Night session Monday — Banquet Tuesday.

The following men will appear on the program with papers and clinics:

Dr. Arthur W. Allen, Boston, Mass.
Dr. Roger Anderson, Seattle Wash.
Dr. Charles O. Bates, Greenville, S. C.
Dr. W. T. Black, Memphis, Tenn.
Dr. O. P. Board, Birmingham, Ala.
Dr. Guy Caldwell, Shreveport, La.
Dr. Thomas E. Cormody, Denver, Col.
Dr. Virgil S. Counseller, Mayo Clinic.
Dr. George W. Crile, Cleveland, Ohio.
Dr. Roger G. Doughty, Columbia, S. C.
Dr. John F. Erdmann, New York, N. Y.
Dr. Edgar Fincher, Jr., Atlanta, Ga.
Dr. Paul G. Flothow, Seattle, Wash.
Dr. Emmerich von Haam, New Orleans, La.
Dr. W. D. Haggard, Nashville, Tenn.
Dr. Arthur Hertzler, Halstead, Kan.
Dr. Gerry Holden, Jacksonville, Fla.
Dr. C. C. Howard, Glasgow, Ky.
Dr. Chevalier Jackson, Philadelphia, Pa.
Dr. Harry H. Kerr, Washington, D. C.
Dr. Joseph E. King, New York, N. Y.
Dr. Francis E. Lejeune, New Orleans, La.
Dr. Jennings Litzenberg, Minneapolis, Minn.
Dr. James S. McLaster, Birmingham, Ala.
Dr. Fred Rankin, Lexington, Ky.
Dr. J. U. Reaves, Mobile, Ala.
Dr. Curtice Rosser, Dallas, Texas.
Dr. Alfred A. Strauss, Chicago, Ill.
Dr. A. Street, Vicksburg, Miss.
Dr. J. W. Tankersley, Greensboro, N. C.
Dr. Alan C. Woods, Baltimore, Md.

If you do not receive a program by the first of March write for one—Dr. B. T. Beasley, Atlanta, Ga.

From Herald & News, January 9, 1936:

Dr. T. H. Pope and Dr. J. K. Wicker brought an appeal from the Newberry County Medical association that the county delegation use their influence in having the state appropriation for the South Carolina Medical school raised. The amount as stated in the budget for 1936-37 for the medical college would reduce the rating of the school from an "A" college to a "B" college. This would mean that those men who are now there and who will finish cannot stand examinations anywhere outside of South Carolina, they cannot be interned in any hospitals outside the state, or practice anywhere only in South Carolina. Neither can they compete for any United States medical job, all because they will be graduates of a "B" standard college. Dr. Pope quoted from an editorial in The State on Dr. S. E. Harmon, who said we would rather have no medical college than a "B" standard college. South Carolina would be the only state in the Union with a "B" standard medical college. Dr. Wicker said that other medical colleges have large endowments, which the College of Charleston does not have, and as it has high standards, and many men who have graduated there have become famous in their lines, we should try to keep it as it is. It is one of the oldest medical colleges in the United State, only three being older.

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THE LARSEN COMPANY, Green Bay, Wis.

THE SOUTH CAROLINA DENTAL ASSOCIATION PROPOSES TO AMEND THE LAW ON ADVERTISING DENTISTS IN THIS STATE IN LINE WITH THIRTY ONE OTHER STATES

Paragraph 4, *Section* 18, *Present South Carolina Law.*

For advertising in any such manner as to defraud or deceive, or that will tend to defraud and deceive the public, and when proof is submitted to the Board that any dentist has failed to perform any work in any manner and at such price or prices as may have been advertised, or when any dentist shall have failed or declined to perform over, without further remuneration, in any period which may have been specified such work as he may have guaranteed through advertising or in any other manney.

Substitute Oregon Law as Follows for Paragraph 4, *South Carolina Law.*

For unprofessional conduct, or for gross ignorance or inefficiency in his profession. Unprofessional conduct shall mean employing what is known as "cappers" or "steerers" to obtain business; the obtaining of any fee by fraud or misrepresentation; wilfully betraying professional secrets; employing directly or indirectly any student or any suspended or any unlicensed dentist to perform operations of any kind, or to treat lesions of the human teeth or jaws, or to correct malformations thereof; making use of any advertising statements of a character tending to deceive or mislead the public; advertising professional superiority or the performance of professional services in a superior manner; advertising prices for professional service; advertising by means of a large display; glaring light signs; or containing as a part thereof the representation of a tooth, teeth, bridgework or any part of the human head; employing or making use of advertising solicitors or free publicity agents or advertising any free dental work or free dental examination; or advertising to guarantee any dental service, or to perform any dental operation painlessly.

The South Carolina Dental Association proposes to amend the present law on Advertising Dentists and bring it in line with thirty one other states which have adopted similar laws. The amendment will be very much broadened in line with the Oregon State Law which has been up-held by the Supreme Court of the United States.

BOOK REVIEWS

POLIOMYELITIS:—By John F. Landon, M.D., Attending Physician, Willard Parker Hospital, Special Consultant in Pediatrics, Womens Hospital, New York City, Assistant Attending Pediatrician Roosevelt Hospital; and Lawrence W. Smith, M.D. Pathologist, Willard Parker Hospital, formerly Assoc. Professor of Pathology, Cornell Medicall School and Harvard Medical School. Cloth. Price $3.00. Pp. 275, with 18 illustrations. New York City.

The Macmillan Co. 1934

This is a handbook for physicians and medical students. It is based on a study of the 1931 epidemic in New York City.

During the summer and early fall of 1935 a rather extensive, but mild epidemic of poliomyelitis occurred in North Carolina. It caused a great deal of consternation, indeed almost panic among the people there, and to some extent in adjacent states.

South Carolina escaped but the populace was apprehensive, and anxious for information.

Many physicians who had had no experience with this dreaded malady, had many questions put to them which they could not answer.

While many problems today still remain, yet a vast amount of research has been done, and much has already been learned.

This very practical volume by Landon and Smith gives an excellent first hand account of the epidemiology, the symptomatology and the diagnostics. Of course prophylaxis and treatment are far from settled. This practical work which is free from padding brings our knowledge up to date and should prove very helpful to anyone who wishes to get a concise and accurate outline of poliomyelitis.

The book is well printed on good paper. The illustrations are very helpful in portraying exactly what happens to the patient and his nervous system.

It is in short a book well worth having in ones library and is one that is easily read.

R. M. Pollitzer, M.D., F.A.A.P.
Greenville, S. C.

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South Carolina Medical Association

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PURULENT PERICARDITIS

By
L. EMMETT MADDEN, M.D.,
Columbia, S. C.

This paper is presented to the Association to bring to its attention the fact that pus in the pericardial sac is not uncommon and that careful and frequent examination of the heart in those conditions in which it may occur will lead to a correct diagnosis, the institution of proper treatment, and thus materially reduce the mortality rate. Osler said "No serious disease is so frequently overlooked" and he might have added, overlooked because not thought of and not looked for.

While writers have claimed that purulent pericarditis was known to ancient medical men, the rational diagnosis probably dates to Auenbrugger's discovery of precordial bulging and precordial dullness. This was followed by Lannec's description of pericardial friction rub, although he misinterpreted its meaning. Other refinements in the physical diagnosis have been gradually added. Rotch described dullness to the right of the sternum in the fifth interspace. Bamberger found an area of dullness just below the angle of the left scapula. Sibson emphasized the importance of dullness in the third interspaces.

The history of surgery of the pericardium is interesting, but we will only touch upon it. Romero in 1819 performed the first successful pericardiotomies in cases of pericardial effusion. Hilsmann in 1844 performed the first successful pericardiotomy for purulent pericarditis. To the present less than 200 cases have been reported that have been treated by pericardiotomy.

The incidence of purulent pericarditis is much greater than the number of cases operated upon indicates. Osler found 29 cases of pericarditis in 184 patients dying of pneumonia. Pryah and Pain found acute pericarditis in 33 of 51 autopsies in acute osteomyelitis. Stone in 300 cases dying of pneumonia at Fort Riley found 24 per cent with acute pericarditis, of which, 15 per cent were purulent. Dunham in 603 cases dying of streptococcus broncho-pneumonia found that 44 per cent had pericarditis. Lynch in autopsies on 106 cases dying of lobar pneumonia at Roper Hospital in Charleston, found 6 cases of purulent pericarditis and 2 cases of fibrino-purulent pericarditis. Musser and Norris in 2128 autopsies on cases dying of pneumonia found an acute pericarditis in 12.6 per cent.

From the above statistics we can arrive at some idea of the probable number of cases of purulent pericarditis occurring in North and South Carolina in the years 1932 and 1933.

In South Carolina in 1932 there were 1,176 deaths and in 1933, 1042 deaths from lobar pneumonia. In North Carolina in 1932 there were 1,280 deaths and in 1933, 1044 from it. If we estimate that at least 5 per cent of the cases dying of lobar pneumonia have a purulent pericarditis, then we had 226 deaths in the Carolinas, in which purulent pericarditis was present. The Duke Foundation, however, reports only 3 pericardiotomies in North and South Carolina during these years.

Pryah and Pain in 196 autopsies performed at the Leed's General Hospital between the years 1921-1931 found acute pericarditis in 214 cases and purulent pericarditis in 91.

Read before the South Carolina Medical Association, Florence, S. C., April 24, 1936.

TABLE SHOWING PRIMARY SOURCE OF INFECTION

Acute intra-thoracic disease including subphrenic abscess.	
Empyema	30
Pneumonia	8
Gangrenous mediastinitis	1
Carcinoma of bronchous	2
Bronchiectasis	1
Subphrenic abscess	3
	45
Acute infective conditions.	
Acute osteomyelitis	17
Abscess cellulitis, etc.	11
Mastoiditis with later sinus thrombosis	2
Peritonitis	5
Suppurative arthritis	2
Liver abscess	1
	40
Cardiac conditions.	
Acute infective endocarditis	3
Arteriosclerosis and contracted kidney	2
Abscess in heart wall	1
	6

ETIOLOGY OF PURULENT PERICARDITIS

	Recovered	Died
Pneumonia	18	14
Measles and pneumonia	1	0
Tonsillitis and pneumonia	1	0
Influcnza and pneumonia	5	0
Pneumonia and pleurisy	2	0
Pneumonia and empyema	2	7
Influenza, pneumonia, and empyema	0	1
Measles, pneumonia, and empyema	1	0
Tonsillitis pneumonia, and empyema	0	1
Measles, pneumonia, and pleurisy	1	0
Abscess, pneumonia, pleurisy, and empyema	0	1
Empyema	2	2
Measles and empycma	1	0
Influenza and empyema	0	1
Tonsillitis and empyema	0	1
Nasal sinusitis and empyema	0	1
Pleurisy	1	2
Abscess, pleurisy, and pyemia	1	0
Tonsillitis, pleurisy, and arthritis	1	0
Puerperal scpsis and pleurisy	1	0
Tonsillitis and pleurisy	1	0
Pulmonary gangrene	0	1
Typhoid fever and congested lungs	0	1
Appendicitis (?) with pneumococcus in pericardial exudate	1	0
Whooping cough	0	1
Influenza	2	3
Osteomyelitis	5	8
Osteomyelitis, empyema, pneumonia, and sepsis	0	1
Pyemia	1	4
Gun shot and stab wounds	12	0
Idiopathic	2	1
None given	4	3
Primary mediastinitis	0	1
Oesophageal perforation	0	1
Gangrene of feet	1	0
Trauma of chest	1	0
Rheumatism	2	0
Tonsillitis, otitismedia, and arthritis	1	0
	71	56
Not stated		1
Total		128 cases.

Winslow and Shipley "Archives of Surgery" Vol. 15 P. 317, 1929.

The organism found depends upon the primary disease. In lobar pneumonia it will probably be pneumococcus. In osteomyelitis the staphylococcus will be present. In pneumonia complicating influenza, it will be a haemolytic streptococcus. Any pus forming organism may be present.

The route by which these organisms get into the pericardial sac also varies with the primary condition. In pneumonia the infecting organism is probably conveyed by the blood stream. In empyema it is probable that the infection spreads by direct extension. This method of conveyance was proven experimentally by Graham and Bell 1918. In osteomyelitis abscess and cellulitis, the infecting agent is brought through the blood stream and may be due to the rupture of a metastatic abscess of the heart wall.

The pericardial sac is described as being fibrous and unyielding, however, in the presence of effusion it may be gradually distended, so that it may hold several quarts. Winslow and Shipley state that the amount may vary from a few drops to 7,500 c.c. The mechanical embarrassment to the heart depends not so much on the amount of fluid present as upon the rapidity with which it accumulates. A sudden haemorrhage into the sac from a puncture or rupture wound of the heart would cause instant death from cardiac tamponade if the pressure were not relieved immediately by pericardiotomy.

The general symptoms of sepsis are present and also those from mechanical and toxic influence of an accumulation of pus in the pericardial sac. Pain is often absent, but frequently the patient complains of tightness or soreness

under the sternum. Cases have been reported which simulated acute abdominal conditions.

Dyspnea or orthopnea are always present and should suggest a careful examination of the heart. Cyanosis will depend upon the degree of circulatory embarrassment or upon associated conditions in the chest. Distension of the veins of the neck is usually present. The pulse is rapid, of small volume, and often irregular. In large accumulations there may be dysphagia and aphonia. Anxiety and restlessness are usually present.

The diagnosis is confusing due to the difficulty in differentiating between an enlarged or dilated heart and a pericardial effusion. That this difficulty is real is shown by the fact that Truesdale in 153 autopsies found only 17 per cent and that Poynton in 100 cases found only 6 per cent had been correctly diagnosed.

Upon physical examination the patient appears ill, restless, and anxious. He may be elevated on a back rest or lying on his left side. Dyspnea or orthopnea and varying degrees of cyanosis are always present. The veins of the neck appear full. There is frequently some oedema of the dependent parts.

Inspection of the heart may reveal some precordial bulging or swelling. This may be marked in young patients. The apex beat is frequently absent or may be wavy over several interspaces.

Upon palpation a friction rub may be felt and the apex beat may be absent. Oedema of the soft tissues can frequently be made out when no evident swelling or bulging is present. The liver edge is frequently palpable below the costal margin.

Percussion shows an enlarged area of cardiac dullness. This area extends higher than would be expected from a dilated or enlarged heart, there being definite dullness in the third interspace. There is usually dullness to the right of the sternum and there may be an obtuse cardiohepatic angle dullness. In small effusions the cardio-hepatic angle is likely to be obtuse, however, as the amount of fluid increases the angle becomes acute. There is dullness posteriorly close to the vertebral column and under the angle of the left scapula.

Upon auscultation a friction rub may be heard in all early cases and may be present even after a considerable accumulation of fluid. The friction rub may be present only with the patient in an upright position leaning forward. The heart sounds are muffled and distant, although occasionally they are very clear due to the anterior position of the heart.

The electro-cardiograph offers no assistance in the diagnosis. X-ray examination of the heart reveals a water-bottle shadow and a loss of the normal cardiac outline. Fluoroscopic examination shows a dimunition or absence of cardiac pulsation.

If after a careful consideration of the history, physical findings and x-ray examination there remains doubt as to the diagnosis, paracentesis of the pericardium should be performed. There has been a question as to the advisability of paracentesis in purulent pericarditis, due to the danger of injury to the heart, coronary vessels, or the internal mammary artery. Winslow and Shipley found that 86 cases had paracentesis and in none of them was there injury to any of these structures. Careful paracentesis should be attended with little danger. Paracentesis will clinch the diagnosis and give definite evidence of the type of organism present and thus influence treatment. However, paracentesis should be considered only as a diagnostic procedure and should never be used as a method of treatment.

The mortality rate of purulent pericarditis treated medically is 100 per cent (Rhodes), while treated surgically by open drainage it should not be over 40 per cent. In 152 cases from the literature reported by Truesdale in 1933 the mortality rate was 42 per cent. Surgery should be resorted to as soon as the diagnosis is made. Careful post operative treatment is essential, all supportive measures are indicated. All septic foci should be sought for and drained.

The prognosis in any given case varies with the primary disease, the infecting organism, and the complications present. The cases of direct infection of the sac, as puncture wounds, have the best prognosis and practically all are cured. The second best group of cases is those secondary to pneumonia and due to the pneumococcus. The least favorable are the cases secondary to osteomyelitis or cellulitis in which a staphylococcus is present. However, in all

groups open operation offers the only chance of a cure and no patient should be considered too ill for the procedure. Complications, such as empyema, render the prognosis more serious.

Late post operative results are very good. If the patient survives one would expect him to be crippled by an adhesive pericarditis. The literature on the subject shows this to be unusual. Winslow and Shipley were able to follow the subsequent course in 29 cases reported. The lapse of time from date of operation varied from five months to twenty-nine years. Twenty-five of the twenty-nine cases were well and at work; one had died of an adhesive pericarditis; one was expected to die of this complication; one had died of a brain abscess; and one case had died from cause unknown.

CASE REPORTS

These cases have been reported by Dr. George Bunch in a paper read before the Southern Surgical Association in December 1934. Two of these cases are being reported through the courtesy of Dr. Joe Dillard and Dr. C. E. Owens.

Case I: Baby J. H. male—white—19 months—was admitted to the South Carolina Baptist Hospital September 28, 1929, with a history that he was normal at birth, but had not been well since an attack of whooping cough when he was six months old. He had an attack of pneumonia early in September and had been acutely ill since that time. There had been progressive loss of weight accompanied by Dyspnea and weakness.

Examination showed a pale, emaciated child with oedema of face and legs. There were crepitant rales over the left chest with dullness in left axilla. Pericardial dullness was enlarged and no friction rubs were heard. The sounds were clear and distinct. X-ray of chest showed a large shadow in the cardiac area of water-bottle shape. Paracentesis was performed.

October 6th: Surgical drainage of pericardial sac was performed and pneumococci were found in the pus obtained.

October 7th: An encapsulated empyema of the left pleura was drained. Patient did nicely and was discharged October 28, 1929.

Physical examination on March 15, 1934, revealed a healthy boy whose heart was normal upon physical, x-ray, and electro-cardio-graphic examination.

Case II: Master D.J.S. An eleven year old white boy was admitted to the Baptist Hospital 3-18-31 with an encapsulated empyema at the right base, following influenza and lobar pneumonia. He had a thoracotomy performed and after an uneventful convalescence was allowed to go home.. Patient did very well up to April 23rd, when he developed shortness of breath, swelling of legs, and general prostration. Readmitted to the hospital April 24th. Temperature 101, pulse 130, and respiration 22.

The patient was sitting up in bed quite dyspneic. The thoracotomy wound was healing. There was an enormous area of precordial dullness, extending 1 1-2 fingers to the right in the 4th interspace and to the left to the lateral chest wall. On the left no heart impulses could be seen or felt. The liver edge was palpable at the level of the umbilicus and there was marked oedema of both legs.

Laboratory findings: White blood count 26,000, polymorphonuclears 78 per cent, hemoglobin 78 per cent. X-ray examination showed a typical water-bottle shadow in the cardiac area.

On April 25th, 250 c.c of thick white pus was removed by paracentesis with improvement in heart action. Pneumococci were reported in the pus. On April 26th, 175 c.c and on April 27th, 50 c.c. of pus were aspirated. Phlebitis developed in the left leg with swelling and tenderness along the posterior tibial vein.

On April 30th, the patient was referred for operation and under local anesthesia the 6th costal cartilage was resected and the pericardium drained. Although mechanical embarrassment of the heart was relieved the patient died of general sepsis on May 4, 1931. No autopsy was obtained.

Case III: Mr. H.O.S. A 29 year old white man was admitted to the Columbia Hospital December 4, 1931, having been sick since November 11, 1931, with pneumonia. A left non-encapsulated empyema was drained by thoracotomy on the day of admission. Patient did very well for some days, but then became worse and physical examination showed an acutely ill pa-

tient with marked dyspnea. There was a draining thoracotomy wound in the posterior axillary line on the left side. There was a moderate enlargement of the cardiac dullness and a definite friction rub was heard over the base. The x-ray showed a water-bottle shadow in the middle of the thorax. A paracentesis was performed and pus obtained which contained pneumococci. The patient was operated upon December 21, 1931, and from 4 to 6 ounces of purulent fluid escaped.

Following operation the patient improved and his temperature fell to normal on the 4th day and remained normal for several days. Following this period of improvement the patient began to go down hill rapidly and to have recurrence of his septic symptoms. No cause could be found until a x-ray of the chest on January 4th, showed a shadow about the size of a lemon in close proximity to the heart in the region of the left hilum. Pus was obtained by paracentesis in this area, but the patient died several hours later. An autopsy was obtained and the pericardium was empty except for a moderate amount of fibrin. An encapsulated empyema was found in the region of the pulmonary hilum on the left side. The impression at autopsy was that this patient had been cured of his pericarditis, but had died from this, his second empyema.

Case IV: T. R. White boy 12 years of age was admitted to the Baptist Hospital January 12, 1933, after having been sick 4 weeks with a deep abscess of the thigh which was incised. He later developed pneumonia. On admission his temperature was 104, pulse 130, and respiration 30, leucocytes 18,000 with 80 per cent polymorphonuclears, hemoglobin 60 per cent. His urine contained albumin and casts. Physical examination showed an acutely ill, emaciated boy quite dyspneic with moderate amount of cyanosis. Examination of the chest showed numerous rales over the right upper lobe. The cardiac dullness was enlarged to the mid-clavicular line on the left and two finger breadths to the right of the sternum in the fifth interspace. A definite friction rub was heard over the base of the heart. A paracentesis showed pus which upon microscopical and upon cultural examination showed staphylocci.

On January 13th, the day after admission, the 6th costal cartilage was resected and about 6 ounces of purulent effusion containing masses of fibrin was drained from the pericardial cavity. Before incising the pericardium the left pleura was accidentally opened and was closed with catgut. The pericardium was drained with a rubber wick.

He improved after operation, but continued septic. January 18, 1933, a left empyema was drained. Staphylococci were cultured from the empyema pus, from the pericardial pus, and from the blood stream. He was at times, extremely ill and had numerous septic exaccerbations with high fever. He remained in the hospital until April 3, 1933—71 days.

March 15, 1934, showed a robust boy, a football player, with a normal heart upon physical, x-ray, and electro-cardiographic examinations.

CONCLUSIONS

1. Purulent pericarditis is not a rare condition.
2. Frequent and careful examination of the heart is indicated in pneumonia and all other conditions that it may complicate.
3. The profession is failing to diagnose purulent pericarditis.
4. The treatment is purely surgical.
5. Following recovery most patients have normal hearts.

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DISCUSSION

Dr. George H. Bunch, Columbia:

I am very much interested in this subject. I think that the medical profession have been much asleep in these cases over the years and that they really are only beginning to realize the true significance of this condition and the importance of it. We are indebted to Dr. Madden for bringing to our attention today a complication of pneumonia and of other septic condi-

tions that is evidently much more common than any of us heretofore have realized. The number of deaths from pneumonia in North and South Carolina, as obtained from the State Boards of Health, for the years 1932 and 1933, as compared with the very few operations for purulent pericarditis, as given by the Duke Foundation for these states for these years, proves that this condition is much more common than we thought and that these patients die without the complication being suspected or being treated. It behooves internists, pediatricians, general practitioners, and all clinicians, to become pericarditis-minded. The large heart shadow, the large area of precordial dullness, indicate pericarditis with effusion. When they occur, if there is fever, I think paracentesis should be done to learn the nature of the fluid. If there is pus, we have an abscess in the pericardial sac, an abscess that can not drain spontaneously; which if left undrained will cause the death of the patient in one hundred per cent of the cases. Fortunately, however, these abscesses may be drained by a simple surgical procedure, and then the mortality drops to forty per cent. Under local anaesthesia the sixth left costal cartilage can be resected, and then we get direct access to the pericardium. All these cases are desperately ill from the primary condition and this complication, but no case is too sick to be operated on, no case is too sick to be given the chance that surgery has for him. This operation can be done under local anesthetic, without shock and practically without danger.

The diagnosis in these cases must be made by the clinician, by the man who is in daily attendance on the pneumonia patient. When the surgeon sees the case, the diagnosis has already been made. Close cooperation between the clinician, the roentgenologist, and the surgeon is at all times necessary for the best result.

Dr. C. H. Blake, Greenwood:

I have had the privilege of seeing one of these cases that Dr. Madden has reported. It was referred to my associate, Dr. Turner, in Greenwood, and I saw it in consultation with him. The patient was admitted to the hospital on January sixteenth with the history that six weeks previously he had had pneumonia, from which he failed to get well. You can see the definite enlargement of the pericardium here. (Slide.) Dr. Madden has explained these things so definitely that I shall just show you the enlargement of the pericardium. You can see the enormous distension. This boy came in extremely ill, with a definite subnormal temperature at all times. There was definite increase of the heart dullness, with a dullness in the axilla, also due, I presume, to compression of the lung itself. At first we thought we had probably an empyema and did a paracentesis of the pleura and got nothing. Then on the eighteenth we did a paracentesis of the pericardium and withdrew twenty ounces of purulent fluid. This we stained with the Gram method and proved to be rather rich in a Gram-positive organism, which we took to be the pneumococcus. The patient had relief from his distress after the puncture, but two days after it the distress became so great that we did another paracentesis and withdrew twenty-eight ounces of purulent fluid. The next day he was distended again. In other words, the accumulation of fluid was so rapid that we decided to do a pericardiotomy, which we did and put in a rubber dam. That was left in for two or three days and then taken out. The patient continued to drain and made no progress at all. The blood picture in this case showed a pneumococcic blood-stream infection also. After drainage his temperature would go up to around 100 to 101. He was operated upon on January twenty-first. On February first he developed excruciating pain in the chest, coughing up bloody sputum; I presume he had another pneumonia. On February fourth he died.

I think there is no question that this patient had had a purulent pericarditis for a long time and as complication of his pneumonia. We must look more carefully for this complication.

Dr. Roger G. Doughty, Columbia:

I just want to point out that in the years I have been in Columbia I have seen not a single patient with this condition. It must be much more common than stab wounds of the heart, and I have seen three of those. It must be much more common than other conditions which we see occasionally, and I simply want to take this opportunity to thank Dr. Madden for his presentation of the cases and to point out how rarely other surgeons in our community have seen this condition diagnosed. And until it is diagnosed it can not be handled from a surgical point of view.

Dr. J. A. Dillard, Columbia:

In the paper and in the discussion this morning there seems to be brought out the large number of these cases that are found at autopsy, and how few are found prior to autopsy. When men doing general practice, as I do, pick up a textbook and read of purulent pericarditis, or pericarditis with effusion, we find the textbooks set out the classical symptoms to be pain, increased cardiac dullness, muffled heart sounds, and absence of the apex impulse. Now, Capps, of Chicago, proved by mechanical irritation experiments that the entire inner sac of the pericardium is insensitive except in the left lower aspect, which is due to the phrenic nerve. (In passing, I might say that the surgeon, in placing a rubber dam for drainage, should not place it in the left lower aspect because of the pain which it will cause.) Cardiac dullness also may not exist. If there are adhesions between the anterior chest wall and the pericardium, as the pus forms, the sagital diameter of the pericardium is increased and the pus gathers in the mediastinal portion of the pericardium which may hold a large amount of pus without increasing the cardiac dullness. As for the absence of the apex impulse and

the muffled heart sounds, they may be there, but they also may not be there. If the adhesions which we just spoke of in the other condition exist, we get very distinct heart sounds and the apex impulse is there and in its normal position. Also, if the patient has been lying in a dorsal position most of the time, and if there is very thick pus, the pus may gravitate to the posterior portion of the sac and force the heart toward the anterior chest wall in which case the heart sounds would not be muffled nor would the apex impulse be absent.

Dr. P. D. Hay, Florence:

I wish to thank Dr. Madden for his very excellent paper on this subject, which has been of some interest to me in recent years, and I should like to report briefly a case of purulent pericarditis which we had a few years ago. This case was of a man fifty-two years of ago who had a lobar pneumonia. After a rather delayed resolution, he began running a septic temperature. The chest signs were clearing up pretty well, but there were signs of an enlarged heart. He was referred to me for an x-ray examination of his chest and possibly the heart. In this case, in addition to the water-bottle shape and the enormous dilatation of the heart shadow, he had a motionless heart shadow except at the extreme apex, where he had very tumultuous pulsations of the cardiac outline. There was only one conclusion I could arrive at in a case with this septic temperature, with enlarged heart, and with this localized, tumultuous pulsation; that is, that he had some adhesions which fixed the parietal pericardium to the heart at the apex and which occasioned pulsations at that point and nowhere else; and I made a diagnosis of purulent pericarditis. I think it is a point that should be borne in mind. In this case a paracentesis was done and about 100 c.c. of thick pus was aspirated. Then a pericardiotomy was done, but he was in very poor condition when it was done, and he died. The autopsy showed shaggy pericardial exudate extending for about two inches in diameter at the apex of the heart, and at that point there were adhesions. At all other points there was tremendous dilation of the pericardium.

O. B. Mayer, Columbia:

A very important condition has been clearly brought to our attention. Undoubtedly, cases are being overlooked. Purulent pericarditis should be kept in mind in all infectious cases, especially pneumonia, when the sickness is unduly prolonged. Frequent examination of the chest is necessary to detect early signs; a heart may show no outward evidence today and twenty-four hours later alterations of sounds, size or increased dullness with diminished precordial activity, or a friction, may have occurred, calling to mind the pathology that is taking place.

I have been on the alert to detect this condition, especially since 1931, when I was privileged to be associated with Doctor Bunch in one of the reported cases, but I have not recognized one since.

The out-come depends on many factors, especially early recognition and proper surgical drainage; obviously, more than this is necessary for recovery. When there is an associated blood stream infection, the prognosis is more uncertain even though there is early recognition and drainage.

It is worthy of comment that Doctor Madden's cases were all males, and three out of four were children. Pediatricians especially should be on the alert.

Dr. J. H. Cannon, Charleston:

I had the pleasure of hearing Dr. Churchill, of the Massachusetts General Hospital, discuss the question of purulent pericarditis from the surgical side, and thought it was interesting. He emphasized this point particularly, that in all septic cases he required his house surgeon to note on the progress sheet daily that he had examined the heart and there was nothing found wrong. That had to go down daily, because he was emphasizing the point that a purulent pericarditis which is not drained early results in almost one hundred per cent mortality, and that it had to be found early for drainage to do any good, and that if you did not find it early there is no use in draining.

THE ETIOLOGY AND TREATMENT OF PEPTIC ULCER WITH AN ANALYSIS OF SEVENTY FIVE CASES

By

Wm. H. SPEISSEGGER, M.D.,
Charleston, S. C.

From an historical standpoint, peptic ulcer is a comparatively new disease. It was first described by Cruveilhier(1) in the early part of the nineteenth century. It is no respector of persons, developing in the high and the low, the rich and the poor. It may occur in the first few days of life or in the centenarian. In women ulcer incidence is highest in the third decade, while in men it is highest in the fourth and fifth decades. According to Beckman(2), multiple ulcers are thought to occur in from twenty to thirty per cent of cases. Peptic ulcer is said to occur four to eight times more frequently in men than in women, and duodenal ulcer is said to occur four to eight times more frequently than gastric(3). Beckman(2) says that the majority of ulcers occur in the duodenum of the male. Bevan(1) has gone so far as to say that at least ten per cent of the population have peptic ulcer.

Read before the South Carolina Medical Association, Florence, S. C., April 24, 1935.

It is generally conceded that the ulcer is produced by the action of the hydrochloric acid of the gastric juice upon some devitalized area or some point of lowered resistance, but there seems to be considerable disagreement as to what causes this lowered resistance. A number of theories have been advanced with regard to the etiological factor or factors involved in bringing about this lowering in the vitality or resistance of the stomach or duodenal wall, but as yet none of them have been definitely proven to the exclusion of the rest.

It is claimed by many that the chief etiological factor is a general malnutrition, especially the presence of anemia. (2) Proponents of this theory point out that during the World War, when the food blockade was on, there was a great increase in the incidence of peptic ulcer in Germany and Austria. In connection with this theory Smith and McConkey(4) have made some interesting discoveries. They noted that in guinea-pigs peptic ulcer was associated with scorbutic lesions. They have been able to produce peptic ulcers in guinea-pigs by feeding them diets deficient in vitamin C.

Another group claims that the chief etiological factor is trauma or insult to the gastric or duodenal mucosa. The trauma may arise from the habitual use of tobacco or alcohol, from habitually eating very hot or very cold foods, or irritating foods. External trauma may also be a causative factor. Eusterman and Mayo(5) have pointed out that under exceptional circumstances, a blow to the abdominal wall may cause a gastric ulcer.

There are others who claim that peptic ulcer arises from focal infection. Nickel(6), who has experimented with cultures from a number of ulcer patients, thinks that a streptococcus is a causative agent. Macrae has even gone so far as to say that peptic ulcer is always due to infection in some part of the body.

Mental stress and nervous strain have been advanced as an etiological factor. It is generally conceded that the emotional, neurotic, nervous type of person is most likely to develop an ulcer. Adherents of this theory point out that ulcer patients improve much more rapidly when their minds can be relieved of worry and anxiety.

Von Redwitz(2) in 1927 stated: "Though peptic ulcer at times seems to be an entity, it is in many cases only part of what may be called an ulcer sickness or ulcer tendency, in which case its presence is attributable to a constitutional basis, and recurrence is likely to take place in spite of either medical or surgical treatment."

To sum up, it is not at all improbable that all of the above factors may enter into the etiology of peptic ulcer; and that, while in some cases it may be due directly to focal infection, or to trauma, or to nervous strain, or to a systemic condition, in most cases it is due to a combination of these etiological factors. Finally most writers will agree that the real cause of peptic ulcer is still unknown.

TREATMENT

The object of the treatment of peptic ulcer is to remove the underlying cause and to bring about a repair of the damage produced by the ulcer. Since the etiology is still uncertain, efforts to remove the cause must be empirical. All foci of infection should be cared for. Mental and nervous strain should be alleviated as much as possible, and efforts should be made to keep the patient in a healthy state of mind. Physical rest of the ulcer-bearing area is also important.

It is evident that ulcers in different individuals respond differently to treatment. It is probable that many ulcers occur, give few or no symptoms, and heal with little or no treatment. This is evidenced by the finding of ulcers on routine X-ray examination and the presence of ulcers and healed ulcers on post mortem examinations. Again there are ulcers in which treatment is followed by complete and permanent healing. Yet again there are some which persist or recur in spite of all treatment, whether medical or surgical.

In order to treat an ulcer with success; skill, close observation and patience are required. The treatment may be divided into medical and surgical. It is the opinion of most of the prominent surgeons that, in early ulcers, and those cases without severe hemorrhage, and in the absence of perforation and pyloric obstructions, medical treatment should first be tried and surgery resorted to only when it is evident that results cannot be secured by medical means.

There are many methods of classical therapy which, from lack of time, will only be briefly mentioned. The Sippy treatment is probably the best known and most widely used. In Lenhartz's treatment emphasis is given to the addition of eggs to the milk diet. The outstanding feature of the Leube treatment is the continuous application of hot poultices to the epigastrium; while in the Smithies treatment no food is given by mouth from four to seven days, but rectal feedings are instituted.

Recently Winkelstein(7) has advocated a method of therapy in which he uses a continuous alkalinized milk drip into the stomach. This consists of allowing a solution of milk containing five gms. of bicarbonate of soda to the quart to drip continuously into the stomach at the rate of thirty drops a minute. The object is to furnish a constant neutralization of free hydrochloric acid throughout the twenty-four hours of the day. He has reported satisfactory results in forty-two patients.

Rivers and Vanzant(8) believe that mucin is of value in the treatment of some cases of benign ulcer. It may have some protective action for the gastric mucosa. It makes an ideal antacid through its high combining power for free acid and its failure to disturb the acid-base balance of the body. It does not markedly excite gastric secretion. The usual daily dose is from eighty to one hundred gms., fifteen gm. doses being given at such intervals as are found necessary.

In all of the above methods of treatment it is necessary for the patient to stop his work and spend several weeks in bed, either at home or in a hospital. And since the vast majority of ulcers occur in adult males, who are frequently the bread winners of their families, there is considerable economic loss attached to this method of treatment.

In view of these considerations several forms of ambulant frequent feeding treatments have been introduced, which are practicable for both the average physician and the average patient. The object of these treatments is to keep the patient at work while he is taking the treatment. Alvarez(2) has instituted one form of ambulatory treatment. His treatment is based on the hypothesis that if a patient is to continue to work he must have three good meals a day. He gives his patients a "smooth diet" list from which to choose their meals, and he does not prohibit meat or meat broths. He points out, however, that the important point in the treatment is the taking of food between meals.

Another type of ambulatory treatment, and one which I have used with success recently in three cases, is described by Sturtevant(9). I quote from his article. "We found that there were certain things we could not do in an ambulatory treatment which were done in some of the best known and most popular treatments. We found that we could not give a preliminary fast of one to five days. We could not apply heat or cold to the abdomen. We could not apply the principle of rest in healing so far as to keep the patient in bed. It is important to a fair percent of ulcer patients to permit them to work. If we take our working patients from their work, a great load is thrown on our social service, for the patients' families must live." He insists, however, that the patient must absolutely stop smoking. The feedings must be taken regularly at exactly the scheduled time, and that a feeding must never be omitted. The patient cannot remain in bed, but he is expected to be in bed at least ten hours out of the twenty-four. During the first week the patient is given alternate feedings of half a pint of milk and of half a pint of milk with a fourth of a pint of cream. These feedings are given alternately every two hours from eight A.M. to ten P.M. Two quarts of milk and a pint of cream are given during the twenty-four hours. This gives the patient two thousand calories per day. A small amount of alkaline powder is given with each feeding. The pain is usually relieved within twenty-four hours. By the end of the first week the patient is hungry, has lost one to four pounds in weight, but feels much better. At the beginning of the second week cooked cereal or milk toast is added to the diet three times a day. The diet is further increased in the third week, and by the fourth week the patient is on a soft diet three times a day with milk feedings in the mid-morning, mid-afternoon, and at 10 P.M. He is kept on this diet for at least six months. At the end of this time

he is given a fairly full diet and advised to remain on it for the remainder of three years. Sturtevant says that he gets just as good results with this treatment as with the old bed treatment and claims that he is getting over eighty per cent cures among those who follow directions.

Recently peptic ulcer has been treated by the intravenous injection of foreign protein, lipo proteins, and a combination of lipo proteins with emetine. It has been shown experimentally that these substances decrease gastric and intestinal motility, as manifested by a decrease in gastric peristalsis and an arrest of pylorospasm. It has furthermore been shown that the injection of foreign proteins produces a hyperemia of the gastric mucosa thereby tending to promote healing. Pitkin(10), an enthusiast of this method, describes the technique and dosage in the June, 1931, edition of the American Journal of Surgery.

The principles of the medical treatment of peptic ulcer may be summarized as follows: Physical and mental rest are necessary. The ulcer must be protected from irritation by a suitable diet. The diet must vary to meet the needs of the individual patient. Hyperacidity must be controlled by alkalis. Success depends upon the proper selection of cases suitable for medical treatment and upon the cooperation of the patient. Finally, in those cases which do not respond to medical treatment, or in which the ulcer recurs in spite of adequate medical treatment, or in which complications develop, surgery should be resorted to.

AN ANALYSIS OF SEVENTY FIVE CASES OF PEPTIC ULCER

On looking through the charts of Roper Hospital, in Charleston, S. C., I have found that there have been 75 cases of peptic ulcer in the hospital during the past six years. These cases were attended by the several physicians and surgeons who happened to be on service at the time these cases were in the hospital. The following is an analysis of these cases.

There were 44 white cases and 31 colored. There were 64 males, of whom there were 39 white and 25 colored, and 11 females, of whom there were 5 white and 6 colored. The males outnumbered the females by nearly 6 to 1.

The ages varied from 18 years to 79 years. The average age was 40 1-2 years.

The location of the ulcers was as follows: Stomach 21 and duodenum 42, or exactly twice as many. The remaining 12 were diagnosed simply as peptic ulcer, no X-ray being taken to determine the exact location.

Symptoms:—The duration of symptoms before admission to the hospital varied from 1 day, in three cases of perforating ulcer, to 14 years. There were 4 cases which gave a history of symptoms extending over a period of more than 10 years. The average duration of symptoms was 20 months. In 71 cases the chief symptom was pain, while in two cases it was hemorrhage. The remaining 2 cases presented no definite ulcer symptoms, the patients being admitted for pulmonary tuberculosis and the ulcer being found on autopsy. Most of the cases gave a history of digestive disturbances, although in several, pain was the only symptom. Hematemesis occurred in 25 cases, or exactly one-third of the total number.

In the gastric analyses the following results were found. The total acidity varied from 90' to 9'. The average was 45.4'. The free hydrochloric acid varied from 74' to 0. The average was 33.5'.

Treatment:—13 cases were treated surgically, the remaining 62 receiving medical treatment. Of those receiving surgical treatment, 9 were admitted with a diagnosis of perforating ulcer and underwent operation immediately. Those treated medically were placed on a Sippy, or modified Sippy diet.

The number of hospital days varied from 1 day, in 3 cases, to 89 days in 1 case. The average number of hospital days was 24.

Results:—Of the 75 cases, 54 were listed, on discharge, as improved, 4 as recovered, and 6 as unimproved. There were 11 deaths in this group. However, only 5 of these deaths were due directly to the ulcer, 4 of the 5 being due to rupture before admission to the hospital. Therefore the mortality, due directly to the ulcer, was only 6.7 per cent.

To summarize briefly; of the 75 cases, the white patients were in the majority. The males

outnumbered the females by nearly 6 to 1. The average age was 40 1-2 years. The duodenal ulcers outnumbered the gastric ulcers 2 to 1. The average duration of symptoms was 20 months. The chief symptom was pain. Hemorrhage occurred in one-third of the cases. Most of the cases were treated medically. Most of the patients left the hospital improved. There were only 5 deaths due directly to the ulcer.

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DISCUSSION

Dr. A. E. Baker, Charleston:

I never fail to learn from a paper like the one that Dr. Speissegger has just presented—a paper that is based upon personal knowledge and a study of the statistics. I want to thank Dr. Speissegger personally for his presentation.

Physicians and surgeons, at least of this country, may be classified into four groups according to their belief as to the etiology of peptic ulcer. We have a group that believes it is due to a derangement of the nervous system, causing a spasmodic condition of the muscles of the stomach and duodenum. Those spasms can be seen when the abdomen is open; I have seen them quite often. Such spasms are supposed to be followed by erosion of the mucosa by the peptone enzyme, causing the ulcer. Then there is a group believing it to be caused by an anemia of the mucosa. Dr. Speissegger has described an anemic spot in the mucosa. This is followed by a thrombosis, causing a breaking down of the mucosa. Then a third group believe in hyperacidity. They believe an ulcer is entirely due to hyperacidity. The pyloric glands are the least resistant of any glands in the stomach and can not withstand the increased acid. Then there is a fourth group, who feel that peptic ulcer always follows duodenitis or gastritis.

As far as treatment of peptic ulcer is concerned, I do not think any of us would want our abdomens opened, as much as some of us like to open abdomens. If it was our own, we would want it treated medically first. I believe these cases should be treated medically, except those that have severe hemorrhages, that have to be treated by surgery, or those cases who have frequent hemorrhages, or cases where there is mechanical obstruction, or a case that has been treated medically and fails to respond. But in the beginning I feel these cases should be treated by a non-surgical procedure.

Dr. W. R. Dancy, Savannah, Ga.:

I want to say that it is a special delight to hear someone get up and read a paper on gastric ulcer who does not want to carve a map of the world on the abdomen.

It has been my pleasure to visit some of the gentlemen mentioned in this essay. I visited Dr. Smithies. He stated definitely what his plan of treating ulcer was. He uses the ambulant method, and Dr. Alvarez has followed him. Dr. Alvarez was in Savannah a few years ago, and he stated that the relief of neurotic symptoms is a great aid in the treatment of ulcer. I visited Dr. Sippy in Chicago. He had hundreds of cases there that he said were ulcer cases. He was giving them all forms of milk; some of it was peptonized; some of it was buttermilk—all forms of milk. I asked him what he did with the cases that just can not take milk. "Why," he said, "Doctor, I give them milk."

Dr. Sippy would pump out the stomach once a day, to see if the stomach contained any acid. He gave considerable alkali several times a day, with the idea of keeping the stomach acid neutralized. This procedure seems inconsistent. Here is the thought that we must keep in mind. The thing that digests the meal is pepsin. The thing that produces pepsin is the action of hydrochloric acid on pepsinogen. If you

kill all the hydrochloric acid, you are not going to have gastric digestion.

I keep acute ulcer cases on milk, in one form or another, for at least three weeks. You can give other things that patients will get well on, but the idea is to do the best you can for your patient, and I believe milk is the best thing. The patient must take from three and a half to four quarts of milk a day to keep up his body weight. I do not put the mild cases to bed; the severe cases must go to bed.

Surgery should not be resorted to except for perforation, recurrent hemorrhages, or old chronic ulcers that do not respond to medical treatment.

I should like to impress this point. The ulcer cases which develop into cancer are gastric ulcers and not duodenal ulcers. The statement is made that from two and one-half to four per cent develop into cancer.

In the first weeks or months we all do the best we know how, and the ulcer heals. It is not much trouble to get an acute ulcer to heal, but the difficulty is in keeping it healed. You are going to keep that ulcer healed by removing the cause of the ulcer, remembering that there is practically always a hypersecretion of digestive secretions from the stomach in an ulcer case. It develops the habit of always secreting too much hydrochloric acid, which is an irritant to the ulcer crater. You must get in the habit of keeping your patient on a bland diet and treating him for a long time. Men like Smithies and Sippy keep them under treatment and observation for two years. They must be kept on a bland diet; otherwise the ulcer habit will return.

TUBERCULOSIS OF THE MAMMARY GLAND WITH CASE REPORT

By

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Sir Astley Cooper first called attention to tuberculosis of the breast in 1829 referring to it as "scrofulous swelling of the breast." Lancereaux in 1860 was first to make examination for histological structure of the part. DuBarr in 1881 described the microscopic pathology. In 1914 Deaver reviewed the literature on the subject and reported 74 cases which occurred between the years 1904 and 1914.

The incidence of mammary tuberculosis is variable according to various authorities. Durante and McCarty of the Mayo Clinic reported in 1916 the incidence of 0.51 per cent. Cheever in 1921 reported four cases of mammary tuberculosis in a total of 228 cases at the Peter Bent Brigham Hospital since 1913, an incidence of 1.7 per cent. In Deaver's Clinic, tuberculosis made up 1 per cent of all breast cases or 2.5 per cent of all benigh breast lesions. Bloodgood reported 6 per cent of all benign breast lesions in his service as tuberculosis. Mallory reported an incidence of 0.6 per cent of mammary tuberculosis out of 2,297 cases, examined at autopsy.

The mode of infection of the mammary gland with tubercle bacilli has been discussed at length. Many authorities believe that the process originates in the breast in the majority of cases. Dickinson states that in about 67 per cent of reported cases there is no evidence of tuberculosis elsewhere in the body. He also states that not more than 5 per cent of the cases of tuberculosis of the breast are secondary to tuberculosis of the axillary or cervical lymph nodes. The possible methods of infection are; first, by hematogenous infection from a distant tuberculous process; second, by lymphatic metastasis and third, by contiguity; fourth, infection through the skin or mammary ducts. In reviewing the literature, it seems likely that more than 5 per cent of the cases result from tuberculous lymph glands in the adjacent regions.

Morgen states that the most plausible mode of infection is by way of the lymphatics through a retro-grade process, the original site being either in the glands of the neck or glandular tissue about the hilus of the lung. The infection from primary focus in the thorax through Grosman's path and Rodman's lymph node is mentioned as a favorable route of infection. Numerous cases of primary tuberculosis of the breast have been reported. Trauma is mentioned as an indirect factor favoring tuberculous infection of the breast in that the vitality of the tissue is impaired. Cahill reports a case of mammary tuberculosis in a young girl thirteen years old with a history of injury to the breast five months previously. Bovine tubercle bacillus is thought by some authorities, notably Barker, to be the causative agent in primary mammary tuberculosis.

There are several types of mammary tuberculosis. First;—acute miliary tuberculous mastitis; second, nodular (discreet, disseminating or confluent) tuberculous mastitis; third, sclerosing tuberculous mastitis; fourth, tuberculous

mastitis obliterans; fifth, various atypical forms.

Acute miliary mastitis occurs in conjunction with generalized miliary tuberculosis and has no special surgical significance. The great majority of cases of tuberculous mastitis are the discreet nodular variety. The bacilli lodge in the mammary stroma rather than ductile or peri-ductile tissue and excite a localized tubercle formation. Daughter tubercles form at the periphery of the original focus and in time, usually a matter of several months but sometimes longer, a palpable mass is formed. This varies in size but rarely exceeds that of a hen's egg. The process may progress from the discreet nodular type to the nodular disseminating or the nodular confluent type or to sinus formation. Also it may become encapsulated and lie quiescent for varying periods of time. One does not see in the breast the abundant reticuloendothelial reaction so characteristic of disease in other organs. There is usually an extensive round-cell infiltration throughout the breast tissue in the region of the lesion and giant cells may be seen. In this type of tuberculous mastitis, the breast is enlarged. The growth is usually slow and does not cause any pain unless necrosis has occurred and the entire breast is broken down. When seen early, the gland is movable, the skin over it possesses a calf-skin like appearance and later redness and inflammation appear. The nipple may be retracted early or late. The glands in the axilla are enlarged early in about 50 per cent of the cases. The axillary glands become involved in the later stages in about 70 or 80 per cent of the cases. In the later stages there are abscess cavities deeply situated in the glands and numerous tubercles. Sinus tracts connect the abscess cavities to the periphery of the gland. In the disseminating type, sinus tracts are numerous throughout the gland.

The sclerosing type of tuberculous mastitis is a very slow progressive lesion and most frequently seen in elderly people. The breast is usually not enlarged and often there is a retraction of the nipple due to a large amount of fibrous tissue formed. Sinus formation is rare in this type. Microscopically, there is usually seen a diffuse lymphocytic, cellular infiltration accompanied by epithelioid and giant cells interspersed with varying amounts of fibrous tissue but very little caseation.

In the tuberculous mastitis obliterans, lesions seem chiefly to surround the milk ducts, destroying the epithelial linings and finally obliterating them. The retained material in the obliterated ducts may excite the formation of foreign-body giant cells. The nipple is sometimes ulcerated away and these cases seem illustrative of a primary ductile infection.

Tuberculosis of the breast is sometimes associated with other diseases of the breast. Cases are reported co-existing with carcinoma and adenoma, fibroma and with pyogenic infections of the breast.

Symptomatology:—In the large majority of cases, the presenting symptom is painless nodule in the breast. Various writers have mentioned the upper outer quadrant of the breast as the site of predilection and the right breast as being most frequently involved. Pain is present in the minority of the cases and in a series of cases presented by Lee and Floyd, 6 per cent of the patients had pain as an initial symptom. Discharge from the nipple or hardening of the breast and sinus formation are other symptoms. In the late stages, a low grade temperature is present, malaise and loss of weight. The physical findings are variable, depending on the stage of the disease. The tumor may be not unlike a malignant growth, being fixed to the surrounding tissue. It is not encapsulated. The overlying skin may or may not have a pigskin appearance. Retraction of the nipple and redness and edema of the overlying skin are often present. Sinus formation may be present. If an unruptured abscess is present, fluctuation may be elicited without the usual signs of abscess; that is, chills and high temperature. The duration of the symptoms is variable from a few months to several years. One case is reported in which a lump was present in the breast eighteen years before a physician was consulted. The involvement is nearly always unilateral. The age incidence is between twenty and fifty years of age. The oldest case on record is a female seventy-three years of age, youngest a male infant six months of age. Differential diagnosis includes actinomycosis, gum-

ma, adenoma, fibro-adenoma, carcinoma, chronic suppurative mastitis, and sarcoma.

Actinomycosis can be differentiated by demonstration of the Ray fungus.

Gummas are ruled out by Wassermann reaction.

Fibro-adenoma are usually well encapsulated.

Sarcomas grow more rapidly and are much more rare than tuberculous mastitis. The demonstration of tubercle bacilli in scrapings from the sinus tract or a biopsy are the only conclusive methods of differentiating tuberculous mastitis from chronic suppurative mastitis, carcinoma and sarcoma.

Case Report: Mrs. J. S., age 29. *C. C.*: Pain in the right breast. *P. I.*: Onset of symptoms are dated to eighteen months previous to admission when the patient had a similar complaint Was operated upon by another physician for abscessed breast. The wound apparently healed and since then at intervals of several weeks she has had a flare-up of her old trouble with spontaneous rupture and drainage of purulent material. During the past six months she has had a sinus just to the right of the nipple which has drained sero-purulent material continuously. She has an infant eight weeks of age. The baby has never nursed this breast. The baby's birth weight was six pounds and at seven weeks it weighs less than six pounds. Tuberculosis has never been demonstrated in the baby. Her health has always been good previous to the onset of the present illness. Has had the usual diseases of childhood, no severe illnesses. Review of systems negative. No respiratory symptoms have been noted. Menstruation always regular. Has not menstruated since the birth of her baby.

Examination: Temperature 97.3, pulse 88, respiration 20. Blood pressure 116/80. Patient is a well developed and fairly well nourished adult white female of 29 years. She does not appear acutely ill. Skin and mucous membranes are pale, giving the impression of an anemia. Head; eyes, ears, nose and throat negative. Neck; no glandular adenopathy, thyroid negative. The lymph glands in the right axilla are moderately enlarged and slightly tender. Breasts; both breasts are abnormally large. Left breast is pendulous and shows venous engorgement. Marked increase in areola tissue. Right breast is discolored throughout and is tender, particularly in the right upper quadrant. There are two discharging sinuses near the nipple. Lungs are negative. Heart sounds of good quality, no enlargement, no murmurs. Radial arteries smooth and soft. Abdomen; the recti muscles are separated two finger breadths. Uterus is not palpable by external examination. No tenderness, no masses, no rigidity. Pelvic examination; the perineum is somewhat relaxed. Cervix is larger than normal, unilaterally lacerated. Uterus slightly larger than normal, freely movable. Adnexal region negative. Extremities and nervous system negative.

Laboratory: Red blood cells 3,750,000. Hemoglobin 80 per cent. White blood count 8,200, 74 neutrophiles and 26 lymphocytes. Wassermann negative. Urine negative.

Diagnosis: Chronic suppurative mastitis.

Operative Record: Simple Mastectomy was done under ether anesthesia. Wound was closed with drainage, tissue drain being brought out through a stab wound in the axilla.

Pathological Report: Gross examination, —the excised breast ulcerated, cut surface about this area showed punctate caseating abscesses. Lactation present. Microscopic examination, —very dense round cell infiltration about ulcerated region. Tubercle formation with giant cells and lymphoid infiltration. *Diagnosis*: Chronic Tubercular Mastitis.

The wound healed by primary intention, tissue drains being removed after forty-eight hours. There was slight drainage from the stab wound. Patient had one degree of temperature on the first post-operative day. Aside from this, post-operative course was afebrile, uneventful. She was discharged on the fifth day. Dressed at home on the eighth and twelvth post-operative days. When last seen three weeks after operation, wound was healed. Patient's general condition was good.

Conclusion: From the brief summary of literature on tuberculous mastitis that is presented,—tuberculous mastitis is probably more common than is ordinarily supposed. It may similate closely chronic suppurative mastitis, actinomycosis, adenoma, gumma, adeno-carci-

noma or scirrhous carcinoma, fibro-adenoma or sarcoma of the breast. In the majority of the cases, abscess with sinus formation with regional lymph gland involvement is the end result. The treatment is total excision of the breast. The regional lymph glands should be removed if they are extensively involved. Some authorities favor x-ray treatment as a post-operative measure. Tuberculous mastitis may occur concurrently with neoplasm of the breast or chronic cystic mastitis. The total number of cases on record are about 515. All of these except twenty have been females. Tuberculous mastitis is essenially a disease of active reproductive period, age incidence being twenty to fifty. A case is presented.

CONTENTS

Cahill, J. A., Jr.—Tuberculosis of the mammary gland; occurrence—case report. Sur., & Obst., 1925, Reb., 227-29.

Dickinson, A. M.—Mammary tuberculosis. Am. J. Surg., 1927, iii,559-97.

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Martin, W. F.—Tuberculosis of the mammary gland. South. Med. & Surg., 1934, xcvi,67-69.

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MINUTES OF THE REGULAR MEETING OF THE MEDICAL SOCIETY OF SOUTH CAROLINA, HELD TUESDAY EVENING, FEBRUARY 11th, 1936, AT 8:30 O'CLOCK, AT ROPER HOSPITAL

The meeting was called to order by the President, Dr. W. Atmar Smith.

The Minutes of the previous meeting were read and confirmed.

Dr. Robert Wilson, Jr. made a brief report on the progress of the Credit Bureau and asked that members send in their lists for compilation.

Dr. W. C. O'Driscoll, the Librarian, reported on the work on the Society's Library, and stated that the repairing and cataloguing of the books was nearly complete. The Secretary added that the workers were now engaged in copying the old minutes of the Society. The President requested that a list of all books transferred to the Medical Society Library be included in the Minutes.

A letter from Mr. J. P. Kranz, Secretary of the Southern Tuberculosis Conference, was read acknowledging the invitation from this Society for the meeting of the Conference in Charleston next fall.

A letter from Mrs. Albert Simons, representing a group of Charleston women, was read. This letter pointed out that there is now no Statute forbidding birth-control activities, and requested that the Society endorse the establishment of a birth control clinic in Charleston. It was pointed out that such activities were endorsed by the House of Delegates of the American Medical Association.

Upon motion of Dr. W. H. Prioleau, this matter was referred to the Committee on Birth Control Clinics.

A letter from Mr. Homer N. Calver, concerning the tax on coconut oil, was received as information.

Scientific Program

Dr. W. H. Prioleau then made a talk, illustrated by slides, on "The Injection Treatment of Hemorrhoids." This was discussed by Drs. D. L. Maguire and A. M. Buist; the discussion was closed by Dr. Prioleau.

Dr. A. E Baker read a paper on "Leucorrhea, its Pathology and Treatment," illustrated with lantern slides. This was discussed by Drs. Taft and Buist.

The meeting then adjourned.

Respectfully submitted,

J. I. Waring, M. D.,

Secretary.

THE JOURNAL
OF THE
South Carolina Medical Association

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MARCH, 1936

THE DEATH OF DR. J. A. MOOD

In the passing of Dr. Mood the State Medical Association loses an Honorary Fellow of high distinction and of pioneer fame. Dr. Mood was one of the first surgeons in the South Atlantic States courageous enough to open a private hospital. He made a notable success of this venture, and for many years this hospital was an inspiring medical center in Sumter County and surrounding counties. Dr. Mood lived to a ripe age and saw the marvelous unfolding of modern medicine and was able to extend its benefits to a large clientele. Dr. Mood meant far more to his community and his state than one sometimes conceives as the limited sphere of the daily rounds of the practitioner of medicine and surgery, great as that may be. He had a significant career as a promoter of the best educational facilities possible for the young people of Sumter County. He was a militant leader in this regard and served on the school board of his native city throughout the greater part of his active life. He had an enviable interest along many other lines and was an all around citizen of the highest type. He had that modesty which always becomes true worth and is more often an evidence of it. He maintained a keen interest in organized medicine. He was a friend to the young physician and had a storehouse of knowledge vouchsafed to few in the medical profession.

THE PROVISIONAL PROGRAM IN THIS ISSUE

The scientific committee, of which Dr. George R. Wilkinson, of Greenville, is the Chairman, presents in this issue the provisional program for the meeting of the State Medical Association, April 21, 22, 23. Everything is now about complete for the largest meeting of the State Medical Association in recent years. There need be no fear of ample hotel accommodations for any number of physicians and their wives who may wish to attend the Greenville meeting. The Poinsett Hotel will be headquarters and the place for all the meetings, but the Ottaray and the Imperial Hotels have been approved by the Committee as being hostelries with every comfort and at reasonable rates. We have never known a meeting of the Association in Greenville to fail as a spectacular success. The profession there is in the forefront in their attainments and eminence. Many of the medical men there are known throughout the United States. The hospitals in Greenville rank with the best in the country. The hospitality of the city is known far and wide. It would be impossible to enumerate here the many advantages

the city of Greenville offers the State Medical Association as a meeting place.

There are a number of special features this year, the most notable being the big dinner for the entire Association. It has been many years since such an elaborate affair of this kind has been attempted by the Association. Every doctor should try to bring his wife to the Convention this year. The facilities for entertaining the ladies are unlimited. The Woman's Auxiliary to the Greenville County Medical Society is a very active organization, and they are in position to provide an extraordinary program for the Woman's Auxiliary to the State Association.

Our guests are known far and wide for their contributions to medicine and surgery. Dr. Crile is an international figure in surgery. This is not his first visit to our Association, but in the intervening years his fame has extended around the world. Dr. Porter, who will deliver the address in medicine, is a teacher of outstanding accomplishments. He represents one of the far famed schools of the South, the Medical College of Virginia at Richmond. This school has grown by leaps and bounds in recent years and is representative of one of the great medical centers of the country.

The President of the State Medical Association, Dr. R. C. Bruce, lives in Greenville. He has served on the various committees in their preparation for our coming. It is not often that the coincidence happens that the Association meets in the home city of the President. A record breaking registration is hoped for in honor of our President.

PROVISIONAL PROGRAM OF EIGHTY-EIGHTH ANNUAL SESSION, SOUTH CAROLINA MEDICAL ASSOCIATION

April 21, 22 and 23, 1936—Greenville, S. C.

Headquarters:

POINSETT HOTEL

The House of Delegates will meet Tuesday, April 21, at 8 P. M.

Papers to be Read Wednesday and Thursday

The Treatment of Intestinal Obstruction by the Use of the Duodenal Tube and Suction. Dr. C. R. F. Baker, Sumter, S. C. Discussion: Dr. C. J. Lemmon, Sumter, S. C.

Bedside Observations on the Dying. Dr. Roy P. Finney, Spartanburg, S. C.

Blood Transfusion. Dr. David F. Adcock, Columbia, S. C.

Thyroid Disease. Dr. Roger G. Doughty, Columbia, S. C.

Cardiac Pain and Its Management. Dr. A. Izard Josey, Columbia, S. C. Discussion: Dr. George R. Wilkinson, Greenville, S. C.

A Clinical Study of Twenty-five Hundred Cases of Appendicitis at the Anderson County Hospital Over a Thirteen Year Period. Dr. J. R. Young, Anderson, S. C.

The Question of Drainage in Abdominal Surgery. Dr. Carl B. Epps, Sumter, S. C.

Facts of General Interest About X-rays and Radium. Dr. Hillyer Rudisill, Jr., Charleston, S. C.

Vesicular Eruptions of the Hands. Dr. John M. van de Erve, Charleston, S. C. Discussion: Dr. J. H. Crooks, Greenville, S. C.

The Simplified Ketogenic Diet in the Treatment of Bacilli Infection of the Urinary Tract in General Practice. Dr. J. H. Cutchin, Easley, S. C. Discussion: Dr. J. D. Guess, Greenville, S. C.

The Prevention of Loss of Weight in the Newborn. Dr. J. I. Waring, Charleston, S. C. Discussion: Dr. Julian Price, Florence, S. C.

Psychology of Sub-normal Individuals. Dr. B. O. Whitten, Clinton, S. C.

A Method for Reconstruction of the Common Duct. Dr. LeGrand Guerry, Columbia, S. C. Discussion: Dr. Robert Cathcart, Charleston, S. C.

Screw Worm Infestation. Dr. W. R. Wallace, Chester, S. C. Discussion: Dr. J. A. Hayne, Columbia, S. C.

The Treatment of Congenital Syphilis. Dr. D. Lesesne Smith, Jr., Spartanburg, S. C.

SPECIAL ORDER

Wednesday afternoon, April 22, 1936

4:00 P.M.

Address

Dr. George W. Crile, Cleveland, Ohio

5:00 P. M.

CLINIC

Hyperinsulinism

Dr. George R. Wilkinson, Greenville, S. C.

SPECIAL ORDER

Thursday, April 23, 1936, Noon

Address

The Relation of Nutritional Deficiencies to Heart Failure—Dr. William B. Porter, Richmond, Va.

AFTERNOON

Ward Rounds and Demonstration of Orthopedic Cases, Shriner's Hospital for Crippled Children: Dr. J. Warren White and Dr. L. H. Coleman, Greenville, S. C.

SCIENTIFIC EXHIBITS

Drs. E. W. and McNeill Carpenter, Greenville, S. C.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 304 (29277). Dec. 13, 1935

Case of Dr. Rhame

Student Wallace (reading):

A white female, housewife, age 39 years, admitted 9-19-35, died 10-5-35.

History: 5 weeks before admission, patient noted general malaise and constipation. A fever developed and had persisted to admission. Soon thereafter a sudden pain developed in the right upper abdominal quadrant, constant, with no radiation. "No history of typhoid fever or typhoid vaccine previously." Only recorded previous illnesses were tonsillitis and influenza. Review of systems all noted as "neg." except "sore throat," "toothache," and "slight hemorrhoids." Family history irrelevant. Married twice; 1 pregnancy by first husband, with miscarriage at 6 1-2 months. No other pregnancies.

Exam: A white female, of normal stature; weight 140 lbs. (usual weight 150 lbs.), temp. 100.4, pulse 120, resp. 20, B. P. 130-88. Skin and mucous membranes yellowish, sclerae yellow. Tongue coated. Unable to examine mouth and throat due to nausea. Lymph glands "neg." Chest "well developed, clear." Cardiovascular: "pulse full, no pathology detected." Abdomen: "tenderness and rigidity over RUQ." Remainder of exam. neg.

Laboratory: Urine (9-19; 9-23; 9-28) cloudy, yellow, acid; S.G. 1.014-1.028; alb. 0, 0, 3 plus; sugar, acetone, bile neg.; casts 0, 0, 1 plus; leukocytes 1 plus (voided specimens). Blood (eight counts, 9-19 to 10-3): Hb. 72 per cent-67 per cent(D); RBC 4,189,000; WBC 15,700 on 9-19, with gradual and progressive increase in each successive count to 43,800 on 10-3; polys 78 per cent on admission, gradually rising to 91 per cent on 10-3; lymphs and monos progressively decreasing. (9-27) Bleeding time 2 min., coag. time 4 1-2 min. Blood Kolmer and Kline neg. Van den Bergh (9-30) direct 3 plus, delayed direct 4 plus; quantitative bilirubin 4.1; icterus index 57. Blood culture (9-23) neg. Stool culture (9-25) for bacillus typhosus neg. Widal (9-19) 2 plus, (9-21) 3 plus, (9-23) 3 plus, (9-25) 4 plus, (10-2) 4 plus. Agglutination tests for paratyphoid A and B continuously neg.

Course: Temp. of continuous type, between 99 and 101.2 until 9-25, then of intermittent type for 3 days, rising in P.M. to 100.6, falling in A.M. to 98. From 9-29 until death, temp. not over 99.8, gradually falling below normal. Pulse continuously above temp. curve on chart, usually varying between 110 and 130. Resp. 20-32, not particularly rapid towards end. Clinically no new symptoms appeared. The jaundice persisted, possibly became deeper. The pain in the RUQ was apparently constant. Became progressively weaker, died at 4:30 A.M. on 10-5-35.

Dr. Robert Wilson, Sr. (conducting): Mr. Pope?

Student Pope: There are pain in the abdomen, continuous fever, and a positive Widal to suggest typhoid fever. On the other hand, the spleen is apparently not enlarged, the blood and stool cultures were negative, and there is a marked leukocytosis, all not fitting into the picture of typhoid fever. In the usual case of typhoid fever going on to a fatal issue, the Widal does not get progressively stronger, since the Widal agglutination test depends upon the presence of antibodies in the patient's serum. It is well known that marked jaundice can give a positive Widal, even one as strong as this became; due to the presence of jaundice in this case, and the other things about the Widal that I have mentioned, I am going to disregard the Widal. Without the Widal, the picture loses most of the features suggesting typhoid fever.

The urinary findings could be explained on the basis of almost any terminal condition, and they would seem to be more likely to develop in a case in which jaundice was present.

Malignancy of the head of the pancreas must be considered, but the course of the illness is seldom as rapid as this one seems to have been.

Cholecystitis remains to be considered. In

the acute forms, the onset is usually sudden, with a chill, high fever, and sweats. While the last features are lacking, the pain, tenderness and rigidity in the right upper abdominal quadrant sound very suggestive. The blood count is quite characteristic of the more fulminating forms. Since this diagnosis more satisfactorily explains all the features of the case than any other, I will make that as my diagnosis. I believe she must have died from a pneumonia, although there is nothing on the record to suggest it.

Dr. Wilson: Mr. Able, what do you think about this case?

Student Able: I think that cholecystitis should be considered, but I believe that the fever would have gone higher with cholecystitis. And the jaundice means that the liver or the hepatic bile ducts must have been involved.

I think that carcinoma deserves serious consideration. I note that she had "hemorrhoids." If by that she meant bleeding at stool, the possibility of carcinoma of the intestinal tract becomes quite definite. The symptoms have apparently been present only five weeks, but that does not exclude the possibility of cancer. The pain in the region of the liver, with the deepening jaundice, suggests severe liver damage, and that could easily be explained on the basis of metastatic lesions in the liver. Of course sudden pain is not the common thing in metastatic carcinoma of the liver; usually the pain is gradual in onset and becomes progressively more severe. If there were a secondary carcinoma of the liver, that organ should have been enlarged; there is no note on the abstract as to the size of the liver. The low-grade fever is also suggestive of carcinoma.

Dr. Lynch: Why do you say fever with carcinoma of the liver?

Student Able: Possibly secondary infection.

Dr. Lynch: Oh, all right. But the carcinoma itself would not cause fever.

Dr. Wilson: Why do you talk about everything but typhoid fever?

Student Able: The jaundice could easily cause the positive Widal, and the other symptoms are not very suggestive of typhoid fever. If we assumed that typhoid fever was present in this case, the background for a cholecystitis would be quite clear; the typhoid bacillus commonly involves the gall bladder and the biliary radicles. However, I do not think that the fever was high enough for a cholecystitis. There should also have been a history of previous digestive symptoms referable to the gall bladder.

Dr. Wilson: There would have been previous symptoms only if the acute attack was an exacerbation of a chronic cholecystitis; an acute fulminating cholecystitis need not be preceded by minor gall bladder symptoms. What do you think the patient died of?

Student Able: I believe that she died of liver failure, as a result of extensive metastases to the liver. The primary lesion may have been in the gastro-intestinal tract. There is nothing on the abstract to suggest that something new developed to carry her off.

Dr. Wilson: We will have time for one more to discuss the case. Mr. Harrison?

Student Harrison: I agree with Mr. Able about the carcinoma. The van den Bergh test was not only indirect, but was also direct, indicating destruction or loss of liver tissue proper. The jaundice in carcinoma of the liver usually progressively deepens as it did in this case. As primary carcinoma of the liver is so rare, I believe that it must have been secondary in the liver, with the primary growth in the stomach or uterus or bowel. The fever and leukocytosis cannot be explained on the basis of the tumor per se, but they would develop as a result of necrosis and hemorrhage into the tumor nodules.

I have ruled out typhoid fever because the symptoms are not definite enough. From the record it would seem that the patient had not been confined to bed for the whole course of her illness, as her only symptoms seem to have been malaise and constipation. After five weeks typhoid fever should have given much more definite symptoms than that. The Widal test means little in the presence of jaundice, as has been pointed out. The gall bladder inflammation that comes on with typhoid fever is seldom this severe.

I cannot explain the sudden pain in the region of the liver, unless infection caused it.

Dr. Wilson: Dr. Rhame, you handled the case. What did you think?

Dr. Rhame: The history as recorded on the

chart is the same as she told me. But she was sicker than you might gather from reading the abstract. She had been in bed for 4 1-2 weeks when I saw her. She was so sick that she was very uncooperative. She refused to answer questions, insisting that she be let alone. She resisted examination, even of the abdomen, and would absolutely not permit a rectal examination. The pain she complained of was quite severe, and she was exquisitely tender in the right upper quadrant. She was dehydrated, her tongue was heavily coated, and she looked quite ill, although she stated that she had been perfectly well up until the onset of her present illness.

She had had a previous operation elsewhere, and I gathered that it was a hysterectomy, although I could not be sure.

Our diagnosis was typhoid fever, probably with cholecystitis, but after consultation we decided not to operate because of her generally poor condition. We thought that the inflammation of the gall bladder had probably extended into the liver, giving a cholangitis there. She was so tender over the liver area, and so uncooperative, that it was impossible to map out the liver.

Dr. Wilson: Dr. Rhame asked Dr. Cannon and me to see the patient in consultation. My own opinion was that all her acute symptoms were related to the liver area. I hesitated between acute cholecystitis complicating typhoid fever, and a primary empyema of the gall bladder. We did not place too much emphasis on the Widal, because, as all of you have noted, a positive result is usually gotten in the presence of jaundice. But from the history and the general appearance of the patient we believed that it was a case of typhoid fever, with cholecystitis. We did not think that her condition warranted operation, however.

Dr. Lynch: Is there any record of why the uterus was removed?

Dr. Rhame: No, we could not find that out.

Dr. Lynch: I asked that because in any case in which a suspicion of malignant neoplasm is entertained it is well to study carefully any previous operations the patient may have had. If her uterus had been removed for carcinoma, it would have been very important in making the differential diagnosis.

She had a carcinoma of the bowel, all right, but just how you men arrived at that diagnosis from the record is more than I can say. Possibly if her physicians had been able to get a more complete history, or had been permitted to examine her more carefully, a diagnosis could have been made, but I believe that the diagnosis is unwarranted with the data at hand.

As you can see here (demonstrating autopsy specimens), there was a large, fungating, cauliflower growth about the ileo-cecal valve, with marked narrowing of the lumen of the ileum by the tumor. This may have caused the constipation, which was one of her first symptoms. On the other hand, as the fecal content of the bowel is liquid as it passes through the ileum, the obstruction must be very marked before constipation is manifest. The small intestine proximal to this point was distended; possibly this distention had something to do with the abdominal discomfort for the last few days. This primary growth was voluminously infected, and this infection was doubtless the important factor in producing the fever and leukocytosis, although necrotic tumor tissue elsewhere, and the marked dehydration may have been factors, too.

From this primary neoplasm in the cecum, massive metastases developed in the liver. As you can see, the liver is about twice its normal size. Numerous umbilicated white nodules can be seen throughout its substance, replacing a large portion of the liver parenchyma, and doubtless interfering with the function of much of the remainder. The liver is markedly jaundiced, probably partially a result of direct destruction of liver cells, partially a result of obstruction to the biliary radicles by the tumor nodules. Death was apparently due to the extensive liver damage. There was no pneumonia, which might have been expected in such a case. Of course the infection of the primary tumor in the bowel was also an important factor in the fatal issue.

This case serves to emphasize two things. In the first place, symptoms, no matter how trivial-sounding, should be carefully inquired into, and in the case of hospital records, written down carefully. If the lead symptom of constipation had been followed up here, the diagnosis might possibly have been made. Constipation is such

a common symptom, and usually means so little in an anatomical way, that it is frequently completely passed over.

The other thing that is well brought out by this case is that a tumor must cause local dysfunction before it is brought to attention. The history is apparently of only five weeks duration. In this case this means, that partial intestinal obstruction was present for that length of time. In many of the internal organs a tumor has to reach an advanced stage before it is brought to attention. Not infrequently a tumor of the bowel is not recognized until it becomes markedly ulcerated and infected, causing diarrhoea and intestinal bleeding. These facts explain the poor prognosis in most cases of internal cancer, when compared to tumors of the skin or breast, for instance, where the whole process can be easily observed and detected early. I am reasonably sure that this tumor had already metastasized when the first symptoms were noted.

But this was also an unusually malignant tumor, considering its origin. Most carcinomas of the bowel are of relatively low grade malignancy.

Dr. Robert Wilson, Jr: On the basis of the record, I can see absolutely no justification for the diagnosis of carcinoma of the liver. Carcinoma of the liver usually gives an obstructive type of jaundice, commonly a complete obstruction. Under such circumstances there should have been bile in the urine (it was not noted here) and bile should have been absent from the stool.

Dr. Johnson: I think the failure to find bile in this urine must have been the result of an error. Jaundice as severe as this, with a three plus direct van den Bergh and an icterus index of 57, is bound to give a spilling of bile into the urine.

Dr. Peery: The sudden onset of pain in tumor cases is not infrequent, and deserves mentioning, as many have hesitated on that point today. Portions of a tumor frequently become necrotic as a result of insufficient blood supply. Blood vessels are not infrequently eroded as necrosis continues, and sudden hemorrhage may occur into a portion of a tumor. This sudden stretching of the tumor tissue may cause a sudden severe pain. Realizing this, a sudden pain should not cause difficulties in a case in which a tumor is suspected.

RIDGE MEDICAL SOCIETY MEETING

The Ridge Medical Society met in the Rutland Hotel the twenty fourth of February 1936, at seven twenty o'clock in the evening with a good attendance.

It had as its guests the members of the Ladies Auxiliary and Dr. and Mrs. R. W. Ball of the Health Department of Columbia, S. C., Mrs. Wilmer Suber County Health nurse of Lexington and Mrs. R. S. Marshall a nurse of Batesburg and Messrs. H. K. Dechart, Hazel, C. Corley and Lawler of the U. S. Public Health Service.

Dr. R. W. Ball gave an interesting lecture on various departments of public health work with special emphasis on infant mortality and maternal welfare, prenatal care, etc.

Mr. Dickert, engineer for the health department made an instructive talk on malaria, its cause and prevention with special emphasis on the mosquitoes and drainage and the economic loss.

Mrs. Hazel and Lawler exhibited a number of films which showed the various stages of development of the mosquitoes and their method of disseminating malaria or infecting people with it.

They also showed the development and methods of the yellow fever bearing mosquitoes.

They gave various illustrations and explanations.

Mrs. W. Suber spoke of some of her observations.

A number of questions as to matters concerning mosquitoes were asked Dr. Lawler.

The following were elected delegates to the State Medical Association:

Dr. J. N. Crafton from Edgefield County.

Dr. O. D. Garvin from Saluda County.

Dr. W. W. King from Lexington County.

Supper was served in the spacious dining room where much merriment ensued.

Short amusing talks were made by some of the visitors and members.

W. P. Timmerman, Secretary.

WOMAN'S AUXILIARY

SOUTH CAROLINA MEDICAL ASSOCIATION

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CONVENTION CALL

The State Convention of the Auxiliary to the South Carolina Medical Association will be held at the Poinsett Hotel in Greenville, April, 21, 22 and 23 with the Greenville Auxiliary, of which Mrs. T. R. Wilson is President, acting as hostess. The hotel is holding in reserve the entire ninth floor for members of the Auxiliary who wish to attend. The manager is very anxious to know the number who would like to make reservations at this hotel. Please notify Mrs. Clarence E. Owens, of Columbia, immediately, so she may in turn notify the Chairman of Committee on Arrangements in Greenville.

For each twenty paid up members or fraction thereof in your County Auxiliary, in addition to yourself, you are entitled to one delegate and one alternate. The alternate may serve in the absence of the delegate. Will you please elect your delegates and alternates at the next meeting of your Auxiliary if you have not already done so and send their names to me immediately so the proper number of credential cards may be sent in due time.

All County Presidents are members of the Executive Board and are urged to be present on the evening of the 21st when the Board will meet to consider important matters.

A most delightful business and social program has been arranged by Mrs. J. L. Sanders, the Convention Chairman.

Mrs. Clarence E. Owens,
President.

LETTER TO ORGANIZATION CHAIRMEN

Among the other good things the New Year has brought to you I hope it has given you increasing zeal and fortitude regarding your Medical Auxiliary work!

I am so interested in knowing how your Auxiliary is progressing in securing new members and keeping alive those already joined. Should any new doctor's wives move into your community please ask them to join your unit, and if there are other ought-to-be Auxiliary members try again to create in them a sympathy and an interest in our work, stressing especially our main goal—the Student's Loan Fund—and that we as an organization hold ourselves in readiness to aid, when called on, the medical profession. Remember that the more members in an organization the more alive it will be; more personal contacts, greater variety of views and talents, and a larger, hence more far reaching work.

I am working on the organization of new Auxiliaries in several towns and hope to have this work complete in a short while. It is to you, however, as organization chairman of your Auxiliary, that I am looking to for help in increasing membership and in the very important work of keeping alive the interest of your present members.

With every good wish for your success in this undertaking. I am

Yours very truly,
Elizabeth Douglas Josey,
Organization Chairman
Auxiliary to S. C. Medical Association.

Columbia, S. C.
Jan. 24, 1936

COMMUNICATION ABOUT JANE TODD CRAWFORD MEMORIAL

The Jane Todd Crawford Memorial, as you doubtless know, is a project of the Auxiliary to the Southern Medical Association, and, as we are one of its branches, the Board would like for us to do what we can towards it.

First about Jane Todd Crawford—in case you are not familiar with her history—she was a Kentucky woman, the first in this country upon whom ovariotamy was performed. The operation was done without anaesthesia by Dr. McDowell, to whom a memorial has already been established, and it is to commemorate the courage of this pioneer woman who rode in from the mountains on horse-back and offered herself for the advancement of experimental science, that the movement has been started. What form of memorial it will be whether scholastic, endowment or statuary has not been decided, but we are asked each year to give something towards it until the work is completed.

Will you please bring this before your Auxiliary at its next meeting, and request five or ten cents per member to be applied to this fund? Columbia has pledged five cents per paid up member, and I hope that every member in the State will do as much, or more.

Please send your contributions direct to our State Treasurer, Mrs Thos. A. Pitts, Columbia, S. C.

I wish you success and thank you for your assistance.

Sincerely yours,

Mrs. J. L. Bundy

Rock Hill, S. C.
Feb. 4, 1936

REPORT TO MRS. SIMONDS, CHAIRMAN OF PUBLICITY FOR THE AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

Greetings and best wishes from South Carolina for a successful Auxiliary year:

The State Chairman for Press and Publicity is one of our most efficient members, Mrs. Clay Doyle of Seneca, so should you have any questions to ask or any instructions to give if you will direct your communications to her you should receive a prompt answer.

South Carolina stands squarely back of you in your Auxiliary work and if there are any requirements new items, etc, which should come from Mrs. Doyle or the State President I should appreciate information relative to same.

I have stressed the necessity of appointing a Chairman of Publicity in each unit but there are some Auxiliaries which have failed to comply. The following is a list of the names of Chairmen which I have been able to secure and where I have failed I am supplying the names of the Presidents.

Mrs. Roddy Miller, Rock Hill, President.
Mrs. Floyd Rodgers, Columbia, Chairman.
Mrs. W. M. Carpenter, Greenville, Chairman.
Mrs. Carroll Brown, Walterboro, President.
Mrs. J. C. Pepper, Easley, President.
Mrs. W. C. Whitesides, York, President.
Mrs. L. J. Blake, Spartanburg, President.
Mrs. D. G. Barton, Anderson, President.
Mrs. O. T. Finklea, Florence, President.
Mrs. J. D. Waters, Saluda, President.
Mrs. Richard Baker, Sumter, Chairman.
Mrs. Clay Doyle, Seneca, Chairman.

Most cordially yours,

Mrs. C. E. Owens,
President of the Auxiliary
to the South Carolina
Medical Association.

Columbia, S. C.
January 22, 1936

SPARTANBURG MEDICAL AUXILIARY MEETING

The President's Birthday Ball which was given at the Franklin Hotel, Thursday, January 30th, was sponsored by the Women's Medical Auxiliary of Spartanburg with Mrs. H. E. Mason general chairman. The ball room was beautifully decorated in patriotic colors and flags. In spite of the inclement weather the ball was well attended. A huge birthday cake was raffled off. Delicious refreshments consisting of punch and cookies were served. The purpose of the ball was to raise funds for crippled children, 30 percent going to the Warm

Springs, Ga. fund and 70 percent to the crippled children of Spartanburg County.

Mrs. P. A. Smith,
Publicity Chairman.

SPARTANBURG MEDICAL AUXILIARY MEETING

The Woman's Medical Auxiliary met with Mrs. James Sparkman, Gadsden Court, on Monday, January 27th, with Mrs. Sparkman, Mrs. C. W. Bailey and Mrs. Dennie Hill hostesses. The guest of honor, Mrs. Clarence Owings, of Columbia, S. C., the State President of the Auxiliary, made an interesting talk on duties of the organization. Dr. Ruth Franks of Converse College gave an interesting account of her visit in India. After the meeting a social hour was enjoyed and delicious refreshments were served.

Mrs. P. A. Smith,
Publicity Chairman.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"INTRASPINAL INJECTION OF ABSOLUTE ALCOHOL FOR INTRACTABLE PAIN"

The relief of intractable pain is an ever present problem. Naturally the most desirable way is to remove the cause and thus effect a cure. However only too often this is out of the question, especially when it is due to far advanced malignant disease. In some cases the suffering is so intense that resort to any measure that gives promise of relief seems justifiable. On the other hand, when complete recovery is impossible, it does not seem advisable to subject these patients to a major operation with its attendant discomforts. There is needed some simple method of relieving pain in these incurables so as to make their last days more comfortable.

Opium has long been used and is still the main stand by. While we would not do without it, its disadvantages and limitations are too well known to need discussion.

Cordotomy has been the answer in some cases, but the fact that it is a major operation makes it unsuitable for many others. In the same category are other operations for section of the nerves in various regions, especially the pelvis.

A simple procedure is proposed by Dr. W. D. Abbott of Des Moines, Iowa (Am. J. Surg. XXXI 351 (Feb.) '36). It is the intraspinal injection of absolute alcohol. He reports its use in 25 patients, in 21 of whom it gave relief to intractable pain.

The patient is placed on the side, with the painful side up, and is flexed horizontally and vertically. The needle is inserted into the spinal canal at the desired level and 1 cc of absolute alcohol is injected slowly, taking four to five minutes. The same position is maintained for about twenty minutes. The patient is then placed in bed on his back with the head lowered for 24 hours. After this he is allowed to be up. If the pain is bilateral the opposite side is injected after five days. If relief from pain is not complete, a second injection is made a segment higher or lower. Immediately after the injection some patients complain of numbness in the distribution of the segment, but this usually passes off in two to three days. In two cases there was transient weakness in the extremity. This gradually subsided. It is of particular interest that there was no loss of bladder or bowel control. There was one death in the series. It occurred in a patient already moribund from general carcinomatosis.

Most of the patients treated were restored to a satisfactory state of health once the pain was relieved. Among them were cases of neuralgia, neuritis and arthritis. In these cases other methods had been tried and had failed.

There were some suffering from incurable diseases such as advanced carcinoma, diabetic gangrene, and tuberculosis of the spine. In the series of 25 cases there were two failures, two

instances of partial relief, and one death. In 21 cases relief was afforded from intractable pain.

Editor's Note: In this column an attempt is made to report advances in the knowledge of surgery. Accordingly many of the procedures are new and have not been sufficiently proven to warrant their general use. While the intraspinal injection of alcohol is easily accomplished, it must not be taken lightly as dire consequences in the nature of nerve and cord degeneration may result.

SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

CERTIFIED SPECIALISTS

Whether the profession and public are right or wrong in complaining at times about the supposed growth of specialism, or whether the chief concern of both has been with the specialist's fee, this editor does not pretend to judge. That "specialists" have been much too easily self appointed in the past, and that both medical and public opinion has been biased by the pride and protestations of some of our pseudo "specialists," seems to be a general idea.

Medical education was satisfactorily elevated and regulated through the activities of the American Medical Association. In recent years, through the efforts of men concerned with maintaining the level and reputation of their particular specialties, a number of Examining Boards have come into existence and have functioned satisfactorily in establishing standards for those who profess to have special knowledge in one branch of medicine.

The first Board, the American Board of Ophthalmology, was organized in 1916. The American Board of Otolaryngology was organized in 1924. The American Board of Obstetrics and Gynecology in 1927 and the American Board of Dermatology and Syphilology in 1932. Following these pioneer efforts have come the American Board of Pediatrics, the American Board of Psychiatry and Neurology, the American Board of Radiology, the American Board of Orthopedic Surgery and the American Board of Urology. At present efforts are being made to provide certifying Boards for internists, surgeons and pathologists. Members of these examining Boards are oppointed by the special societies and the American Medical Association.

Over all of these Boards there has come into being the Advisory Board of Medical Specialties. This Board acts as a coordinator of procedure and standardization. This Board will also publish a register of the licentiates of all the Boards. The Directory of the American Medical Association will include lists of the licentiates also.

It is not expected that any of these Boards will go out into the by-ways and compel candidates to come forward.

These Boards differ from State and National Examining Boards in that they do not confer license to practice but only certify that a physician has had certain experience and training and that he has shown by examination that he is qualified to practice a particular branch of medicine.

Sometimes the trouble and expense of securing recognition by one of the Boards seems to outweigh the advantage of certification, and many qualified physicians in South Carolina have for various reasons failed to show interest in this movement. Nevertheless, encouragement of the establishment of standards and the recognition of the specialists' qualifications would seem to be highly desirable, and the physicians of the state would benefit themselves and their specialties by supporting the various Boards.

There is no necessary implication that the doctor who fails to obtain a certificate is not qualified to practice his specialty, nor does the general practitioner need such a certificate. Nevertheless the general man can feel sure that those specialists who have qualified with their

respective boards are qualified to take care of patients whom he may refer to them.

The following is a list of South Carolinians who have obtained certificates in their specialties. This is compiled from information obtained from the several Boards.

American Board of Ophthalmology—
Edw. F. Parker, Charleston.
D. S. Asbill, Columbia.
S. R. Lucas, Florence
E. W. Carpenter, Greenville.
J. W. Jervey, Greenville.
J. W. Jervey, Jr., Greenville.

American Board of Otolaryngology (to 1934)—
W. H. Nardin (deceased), Anderson.
E. F. Parker, Charleston.
W. J. Bristow, Columbia
M. R. Mobley, Florence.
J. W. Jervey, Greenville.
J. L. Sanders, Greenville.
E. B. Gray, Spartanburg.

American Board of Obstetrics and Gynecology
R. L. McCrady, Charleston.
L. A. Wilson, Charleston.

American Board of Dermatology and Syphilology—
J. R. Allison, Columbia.

American Board of Pediatrics—
E. A. Hines, Seneca.
R. M. Pollitzer, Greenville.
J. I. Waring, Charleston.

American Board of Psychiatry and Neurology
(None).

American Board of Radiology—
O. D. Baxter, Sumter.
P. D. Hay, Florence.
W. S. Judy, Greenville
T. A. Pitts, Columbia.
F. D. Rodgers, Columbia.
H. Rudisill, Charleston.
W. M. Sheridan, Spartanburg.
R. B. Taft, Charleston.

American Board of Urology—
T. M. Davis, Greenville.
J. J. Ravenel, Charleston.

American Board of Orthopedic Surgery—
J. W. White, Greenville.

THE REPORT OF THE SECOND DISTRICT MEDICAL ASSOCIATION, JANUARY 31, 1936

The Second District Medical Association held its semi-annual meeting at The Summerland Hotel near Batesburg at five (5:00) o'clock P. M. January 31, 1936.

Dr. W. P. Timmerman of Batesburg presented an unusual case of a negro child born with a large tumor mass over lower spine and buttocks which was successfully removed. This was discussed by Drs. Keisler, R. Timmerman, Bunch and Pitts.

The first paper of the program was by Dr. George McCutchen on Burns. He classified burns and discussed Gentian Violet treatment of eighty (80) cases and reviewed other methods, and complications and grafting. This paper was discussed by Drs. Frontis, Keisler, Moore and Bunch.

The next paper was Infant Feeding By Dr. T. D. Dotterer. Dr. Dotterer said that slightly more than half of the deaths in the first year occur in the first month. He discussed fresh cow's milk, and advised against feeding it raw. He also covered powdered, evaporated, and lactic acid milk. This paper was discussed by Drs. J. H. McIntosh and Keisler.

The last paper on the program was Milk-Borne Diseases by Dr. O. B. Mayer. Dr. Mayer discussed the milk route in the spread of diseases, and particularly of epidemics of typhoid fever, scarlet fever, and septic sore throat. He also told of the spread of T. B. in milk, and gave the methods of grading milk.

Dr. W. P. Timmerman read resolutions on the death of Dr. Samuel E. Harmon, and a motion was brought by Dr. W. P. Timmerman for an executive committee, one being chosen from each county to care for the interest of the society in that county.

Respectively submitted,
David F. Adcock, Secretary.

BOOK REVIEWS

SEDGWICK'S PRINCIPLES OF SANITARY SCIENCE AND PUBLIC HEALTH. Rewritten and Enlarged. By Samuel C. Prescott, Sc.D., Dean of Science and Head, Department of Biology and Public Health, and Murray P. Horwood, Ph.D., Associate Professor of Biology and Public Health. Both of the Massachusetts Institute of Technology. New York, The MacMillan Company, 1935, price $4.25.

The original contribution of this author in 1901 has been a classic in American Public Health literature. There has, of course, been a tremendous development along all lines of preventive medicine. The broad general principles have now become household words throughout the world, thanks to such pioneers as Sedgwick. This revision by Prescott and Horwood, former co-workers, is noteworthy for enlarged details and much new matter. The chapter on public health administration is both historical and comprehensive. Various phases of the Federal Government's interest in Public Health have been noted, as well as the great foundations such as the Rockefeller Foundation. Child health comes in for due consideration. The sanitation of summer camps has been given an important place in the book, since this is one of the most spectacular problems in modern life. A very interesting chapter is that of health, old age, and disease. A considerable section has been devoted to milk supplies and of course to other foods.

AN INTRODUCTION TO PUBLIC HEALTH, By Harry S. Mustard, M.D., Associate Professor, Public Health Administration, The Johns Hopkins University; Director, Eastern Health District, Baltimore, Md.: Lecturer on Public Health and Sanitation, The Johns Hopkins Hospital School of Nursing. New York, The MacMillan Company, 1935, price $2.50.

The author of this volume is well known in South Carolina. He has had excellent training in public health in many of its phases, and now as a teacher in one of the world's greatest Universities is in position to speak authoritatively. The book is designed to cover rather a neglected field; that is, to give the student of public health a proper perspective. Building on such a foundation, the unfolding of the fascinating development of public health should be inspiring and create a greater urge for subsequent studies. The chapters are as follows:

I. The Background and Associations of Public Work

II. Vital Statistics

III. Organization and Administration of Public Health Work

IV. The Acute Communicable Diseases

V. Tuberculosis As A Public Health Problem

VI. The General Diseases

VII. Sanitation

VIII. The Individual and His Hygiene

IX. Childbearing and Its Relation to the Public Health

X. The Hygiene of Infancy and Young Children

XI. School Health Service

XII. Public Health Aspects of Certain Non-Communicable Diseases

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INFANT NUTRITION, A Textbook of Infant Feeding for Students and Practitioners of Medicine. By Williams McKim Marriott, B.S., M.D., Professor of Pediatrics, Washington University School of Medicine: Physician in Chief, St. Louis Children's Hospital, St. Louis. Second Edition. St. Louis, The C. V. Mosby Company, 1935.

Pediatricians and medical men in general have looked forward with keen interest to a revision of this book. The St. Louis Children's Hospital has contributed greatly to the advancement of Pediatrics, particularly, along dietary lines. The author of this book has made important observations on the role of the infections associated with nutritional disturbances. He has also added much to the knowledge of artificial feeding of infants with the evaporated milks, notably, the various forms of acid milk. The chapter on The Vitamins is up to date and embodies the results of the investigations of the last few years. This is one of the practical books for the general practitioner as well as for those who are interested in pediatrics as a specialty.

RESOLUTIONS ON THE DEATH OF DR. SAMUEL E. HARMON ADOPTED BY THE SECOND DISTRICT MEDICAL ASSOCIATION JAN. 31, 1936

Whereas Dr. Samuel E. Harmon of Columbia, president of the South Carolina Medical Association, and who for a long while was councilor of this The Second District, and who manifested an unceasing interest in matters pertaining to the welfare of the medical profession and especially of this particular section and district, and abhorred and condemned insincerity and deception, fell peacefully asleep the twenty sixth of December, 1935.

Therefore be it resolved: 1st, that in the passing of Dr. Harmon our society and our profession has lost one of their most active, sincere and useful members.

Resolved 2nd: That our sympathies and best wishes be and are hereby extended to his bereaved family.

Resolved 3rd: That a permanent record be made of these resolutions and be inscribed in our minutes.

Resolved 4th: That we bow in silent meditation for a moment as a token of respect to him.

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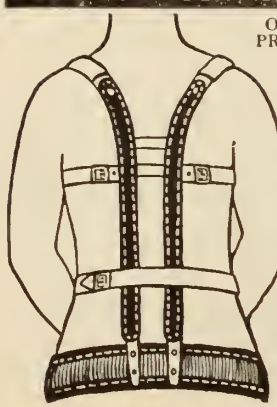
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THE JOURNAL
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VOLUME XXXII APRIL, 1936 NUMBER 4

THE EXTRA-DIABETIC USES OF INSULIN

By
ROBERT WILSON, Jr., M.D.,
Charleston, S. C.

The natural sequence of events, following the introduction of any new therapeutic agent or method, has plotted a similar course throughout the history of medicine. Characteristic of Medicine today is its insistence upon rationalization, but equally important for advancement is the empiric trial of drugs and methods in conditions other than the ones for which they were originally intended. The wide-spread use of fever-therapy, the treatment of lobar pneumonia with pneumothorax, the administrations of the arsenicals in conditions other than syphilis are but a few examples of this tendency. It is therefore not surprising that the introduction of a drug so spectacular in its specific effect as is insulin should occasion its trial in many conditions other than diabetes mellitus, for which it had been sought for years. A brief survey of the literature shows that insulin has been suggested as a therapeutic agent in the management of such widely differing diseases as pneumonia, dementia paralytica, progressive muscular dystrophy, asthma, peptic ulcer, morphine addiction, erosions of the cervix of the uterus, ingrowing toenails, and many more. It should not be amiss, therefore, to inquire into the rationale of its action in a few of the conditions for which it has been recommended, and to try to formulate some basis for direction as to future uses.

Before considering any of the newer uses of insulin, it is essential to review briefly the present state of our knowledge regarding its physiological activity, which has been derived very largely from two main sources, observations upon its effect on diabetic individuals, and animal experiments(1). It has been shown that deductions from one or both of these sources of information cannot always be applied to the normal, non-diabetic patient, and that likewise the sum of our knowledge is not yet sufficient to interpret all observations. However, certain things have been definitely established, and, while others remain in question, we may accept without any reasonable doubt the fact that the major role of insulin is in the regulation of important phases of carbohydrate metabolism:

1. It lowers the blood sugar in diabetic patients, and in normal and depancreatized animals;

2. It effects a transfer of sugar from the blood into the tissues, and is concerned in the conversion of glucose into glycogen;

3. In the diabetic patient and in certain animals, insulin administration results in the storage of glycogen in the liver;

4. Following its use in the diabetic, there is a disappearance of ketone bodies from the urine and blood;

5. Insulin accelerates the consumption of sugar in the excised mammalian heart.

Whether or not insulin is at all directly concerned with the combustion of fat or in the conversion of fat into glycogen is not established, but it is certain that at least indirectly, by providing energy released in the metabolism of carbohydrate, it allows for the complete oxidation of fat and prevents the formation of ketone bodies.

In point of priority, as well as in being the

Read before the Spartanburg County Medical Society, Spartanburg, S. C., November 25, 1935.

most firmly established of its extra-diabetic clinical uses, the administration of insulin in certain cases of malnutrition deserves primary consideration. As early as 1923, insulin was suggested for the treatment of infantile inanition by Pittfield(2), who reported considerable success in a number of such cases. Since that time, numerous authors have commented on its effectiveness, particularly in undernourished adults, and have acclaimed its success in many cases in which other measures resulted only in failure. In a recent and very carefully studied series of such cases, Blotner(3) obtained excellent results from the administration of 10 units of insulin before each meal. Of his 79 patients, normal in every way except for malnutrition, all gained weight and most of them held the weight gained. In this group, as well as in cases reported by other observers using a similar technique, the patients were all encouraged to eat freely and a high calory diet was frequently used, but in many instances dietary measures alone had failed to increase the weight before the institution of insulin therapy.

Illustrative Case: A white woman, aged 27, was admitted to the Roper Hospital on July 26, 1934, with a story of vomiting of 3 months duration and the loss of 25 pounds in weight. Her symptoms had begun when she and her husband had separated, at which time she weighed 130 pounds. There were many other minor complaints of a typical neurotic type. Physical examination showed nothing abnormal except for undernutrition, wt. 105 lbs. Laboratory tests, including X-ray of the Gastro-Intestinal tract, were likewise negative. A diagnosis of Psychoneurosis was made, with secondary malnutrition. Various dietary manipulations were tried without success, the weight gradually falling to 101 pounds and the symptoms of vomiting being unrelieved. Insulin, 4 units before each meal, was begun on Aug. 14th; the patient gained 2 pounds in weight and vomiting diminished considerably, but she insisted on leaving the hospital after only 5 days of this treatment. During the next 7 months her symptoms recurred and gradually became more pronounced, with progressive loss of weight, until March 1935, when she reached 87 pounds. A high calory diet with forced feeding, glucose by vein, yeast, cod liver oil, were all tried without success. On March 21st, insulin, 5 units before each meal, was begun; there was an initial loss of 2 pounds in weight during the first 2 weeks, after which there followed a steady, rapid rise to 116 pounds on June 3rd, when the insulin was discontinued. After this time the patient's weight continued to increase slowly until August 1st, when 130 pounds was reached, which has been maintained until the present time.

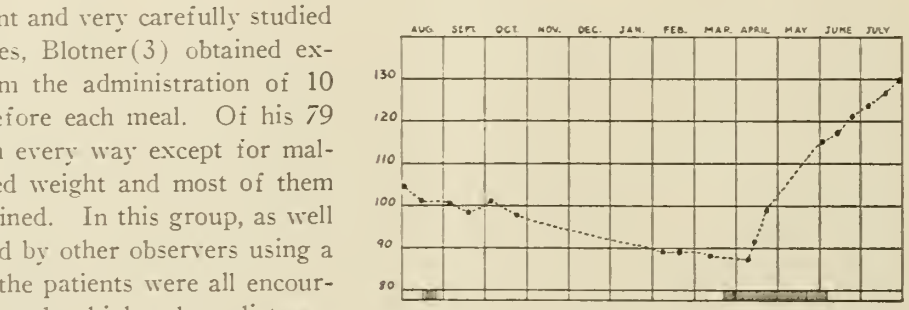


FIG. 1. Chart of patient's weight showing gain during period of insulin administration (shaded lines represent time during which insulin was given).

Comment: All cases similar to the one cited above, in which vomiting of neurotic origin plays a large part, are open to criticism inasmuch as there is a decided psychological element to the method by which insulin must be administered. This, in itself, might in some instances provide a considerable stimulus to the appetite and allow a gain in weight to result merely from breaking the vicious cycle of vomiting. However, a great many of the reported cases cannot be explained on this basis. The exact mechanism by which insulin is helpful in the attainment of results has not been clearly established. It is, of course, merely an adjunct to the essential feature of the treatment, namely, a high caloric intake. We cannot presuppose a lack of insulin in these patients, for if this were so, they would necessarily be diabetic. However, it is entirely reasonable to assume that an increased amount of available insulin might not only stimulate the appetite but also facilitate the combustion of carbohydrate, its conversion into glycogen, the storage of the latter, and the conversion of these materials into fat. Blotner(4) has shown in one case in which biopsy was done before and after the insulin regimen that the subcutaneous fat increased considerably in thickness and that the

individual fat cells more than doubled in size. Although the exact role of insulin in this latter phase of metabolism has not been established, it is sufficient at the present time to be assured of the fact that it is often of distinct advantage.

Closely related to the administration of insulin in simple malnutrition is its use in active tuberculosis as an aid in stimulating the appetite. In the hands of some observers, this has proven to be a valuable adjunct to the other usual therapeutic measures. In a report by Banyai and Jurgens(5), 43 non-diabetic patients with active tuberculosis are cited; of 24 moderately advanced cases treated with 5 to 10 units before each meal, the appetite improved in 19 and 13 gained weight. In 19 far advanced cases, 11 showed an improvement in the appetite, and there was a gain in weight in 9. Fever is said to be a contraindication for the use of insulin, but no good reason is advanced as to why this should be so.

Illustrative Case: A white woman, aged 34, gave a story of gradual loss of weight of one year's duration and massive swelling of the extremities for one week. Physical examination, substantiated by X-ray, showed extensive bilateral pulmonary tuberculosis. Her weight was 68 pounds. Because of an almost complete absence of appetite, 5 units of insulin before each meal was begun on May 5, 1934. After 3 1-2 weeks there had been a gain of 13 pounds in weight and the appetite had improved to a large extent.

In cases of persistent vomiting secondary to a wide variety of causes, the use of insulin has been frequently suggested. Hyperemesis gravidarum, reflex vomiting from organic lesions in the stomach and duodenum, and vomiting of neurotic origin have all been treated with insulin with indifferent success. In no instance has there been shown an essential lack of endogenous insulin and for this reason its use in these conditions has been largely abandoned. However, its occasional value is sufficient to justify a trial in certain cases where other measures have been inadequate, and at times good results are obtained. The rationale of such therapy is little understood; the psychological element associated with a hypodermic injection and the fear of insulin reactions undoubtedly play a large part in its effectiveness.

Illustrative Case: A white woman, aged 63, entered the hospital on Dec. 28, 1933, with a story of epigastric pain, nausea and vomiting, constipation, and loss of weight extending over a period of about two years. X-ray examination showed extreme gastroptosis and a non-obstructive duodenal ulcer. Sippy diet was begun with some relief of pain, but continuous nausea persisted until Jan. 6th, when insulin, 10 units twice a day, was begun. There was almost immediate relief from nausea and vomiting. The dosage of insulin was reduced to 5 units twice daily until Jan. 28th, when it was entirely discontinued, without recurrence of symptoms. During this time there was a gain in weight of about 8 pounds. Re-examination by X-ray at the end of one month's treatment showed much less deformity in the duodenum and was interpreted as being significant of healing in the ulcer crater.

One of the large group of conditions in which the use of insulin has been suggested is that group of diseases in which arteriosclerosis plays the leading role. Beale(6), assuming that insulin enhances the utilization of carbohydrate in the normal individual and that body fats are "burned in the fire of carbohydrate combustion," has advocated the administration of insulin in a wide variety of conditions in which arteriosclerotic degeneration is the important etiologic factor. This author reports good results in the treatment of arteriosclerotic gangrene, angina pectoris, bed-sores, chronic leg ulcers, thrombo-angiitis obliterans, and cases with manifestations of cerebral arteriosclerosis; insulin was given at intervals, usually once or twice a week, and always followed by orange juice. The rationale of this form of therapy is that increased carbohydrate metabolism will favor the dissolution of fat deposits in the inner walls of the peripheral vessels. While all of his cases were stated to have improved, no pathologic evidence is offered to substantiate this supposition. One such case, treated in this manner, may be of interest:

Case Report: A white woman, aged 68, was first seen on Jan. 13, 1935, complaining of considerable vertigo, weakness, and moderate

dyspnea on exertion. She had had a mild attack of congestive heart failure, on a hypertensive basis, in 1934. Physical examination showed nothing of particular significance except for a blood pressure of 170-105, rising later to 180-110. Ophthalmoscopic study disclosed considerable narrowing and tortuosity of the arterial vessels, with some intimal inbuilding, and the consultant suggested the use of insulin. This was begun, 5 units being given at 3-day intervals for approximately 6 weeks. The blood pressure gradually fell to 134-90, remaining at this level for some time. Vertigo began to improve after the second week of this treatment and eventually disappeared entirely. Throughout this period, digitalis and potassium iodide were being given simultaneously with the insulin. Three weeks after discontinuing insulin, the patient came down with a very severe attack of pellagra, from which a slow improvement was made following the institution of treatment with liver extract. Up to the present time, there has been no return of vertigo, but whether insulin was actually of value in this case is questionable, as the vertigo might easily have been a prodromal symptom of pellagra.

It is very difficult to see how an occasional dose of insulin could possibly be of any value in cases such as the one described above. The degenerative changes that go on in the blood vessels throughout the body are usually progressive and always deepseated, and the nature of the lipoid deposits in the vessel walls is such that it would indeed take a credulous imagination to believe that they could be affected by such transitory action as is the result of insulin. And if this were so, we should expect that the well-regulated diabetic patient taking insulin would be one of the last to develop arteriosclerosis, whereas the incidence of arteriosclerosis is particularly high in this disease. However, in the treatment of one of the conditions mentioned above, angina pectoris, the use of insulin has been found by K. S. Smith(7) to be of value in certain selected cases; this is explained upon the known fact that insulin enhances the metabolism of glycogen in the heart, and upon the idea that in such cases the anginal pain is the expression of inadequacy in the supply of available glycogen. The latter is a more acceptable explanation, but I have had no occasion as yet to put it to a therapeutic test.

In acidosis of non-diabetic origin, in postoperative surgical cases, and in the wide range of conditions in which the intravenous injection of glucose is of distinct benefit, the question often arises as to whether or not insulin should be given along with the glucose. In most cases of these types there is no demonstrable lack of endogenous insulin and there is usually no reason to presume that the patient cannot metabolize the carbohydrate administered in this, its simplest form. However, observations upon diabetic patients have established the fact that infections lower the carbohydrate tolerance, and it is easily possible that other debilitating states might have a similar tendency. A rule which some physicians follow with advantage is that if sugar appears in the urine after the intravenous administration of glucose, then insulin is given with all subsequent injections, but it is not used if the urine remains sugar-free. The dosage of insulin necessary in any single case can be found only by the trial-and-error method; the amount of carbohydrate utilized by a unit of insulin is so variable in the same individual as well as in different individuals that no rule can be laid down as to how much would be essential.

In attempting to evaluate the effectiveness of any particular method of treatment, large numbers of cases must be studied before a reasonable conclusion can be reached. This is especially true in the types of conditions under discussion this evening. At the present time, there is no doubt but that the pendulum is still swinging toward an increase in the range of usefulness of insulin. It is inevitable that a reaction will set in, with considerable limitations in its clinical indications. The effectiveness of insulin is well established in malnutrition, in stimulating the appetite, and in cases in which there is definitely proved alteration in the carbohydrate metabolism, and its use in these conditions will continue. In the other types of conditions, in the obliterative lesions of the blood vessels, in effecting a rapid healing of ulcerations, in angina pectoris, a final opinion as to its usefulness must be reserved. Until we

have at hand more accurate methods for the study of glycogen metabolism in all of its ramifications, we must necessarily work under a considerable handicap. It is highly probable that insulin will not be found to be a particularly effective agent in all of the conditions for which it has been recommended, or at least a safe one, but we must know a great deal more about its exact physiology in the body before the final verdict can be passed.

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ACUTE LARYNGEAL STENOSIS IN CHILDREN

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Our purpose in presenting this topic is three fold, first because it is one in which we are greatly interested, secondly to compare our records of twenty three years ago with the present day results and procedures and third to analyze records at the General Hospital during the last four years.

Twenty three years ago I reported a series of fifteen cases of Intubation performed during the two preceding winters with a mortality of 13 per cent covering a territory extending from Westminster to Union and from the upper part of this County into Laurens County. Some of these cases were one hundred miles apart and fifty miles from my office. The roads were firm hard clay in dry weather and the most luxurious deep slippery ruts and holes in wet weather. There were very few phone lines through the country and only those doctors whose wives could endorse for them owned an automobile (describe auto). Folks came for the doctor with a mule or horse and usually arrived in the afternoon or night. Most of my visitations were done at night, one drove as far as the roads went and then got a neighbor to take him the rest of the way in a wagon or some other horse drawn rig. Thus when the doctor arrived precious time had been lost

Few of these cases were seen during the interval between intubation and extubation unless they coughed up the tube and there was time to arrive before death, several did extubate themselves but only one died. This may suggest to you that they were mild cases, the contrary is true. People did not go for a specialist in those days unless the patient was in extremis and when we arrived the babies were usually blue, with swollen faces and necks and great supra sternal tugging and protruding of eye balls.

None of these cases were Tracheotomized, the parents would not permit it because there was no one to properly nurse the case and because the technique was not so highly developed as now.

Hospitals tabooed such cases, most of them were called membranous croup by the family doctor and the first case I succeeded in having admitted to the hospital was on this distinction, my conscience was not serene and I advised isolation. This was done by caring for the patient in a lavatory.

I now wish to report a series of sixty two cases occurring during the years 1931-32-33-and 34 at the General Hospital. This does not include private cases attended outside of this institution.

Total City Hospital 1930-34	62
Total Age in Months	1962
Average in Months	3.164
Intubations	22
Tracheotomies	31
Both Tracheotomies and Intubations	10

Read before the South Carolina Medical Association, Florence, S. C., April 25, 1935.

Mortality 18 Cases	29%
Eight Tracheotomy cases had peanut Broncho-pneumonia.	
Per cent deaths Intubation	13
Per cent deaths Intubation and Tracheotomy	70
Per cent death Tracheotomy	26
Laboratory reports Positive Diphtheria	33
Laboratory reports Respiratory Type Infection	14
Laboratory reports Negative	4
Laboratory reports None on record	4
Cause of Death	
Broncho-pneumonia	6
Toxic	2
Cardiac	4
Pulmonary Edema	2
Empyema	1
Diphtheria	3
Total	18

You will note the mortality from intubation twenty three years ago and these recent cases is identical. That the mortality from Tracheotomy is twice as great as that of intubation. You immediately come to the conclusion that intubation is twice as safe as tracheotomy. This is not the fact. There is almost a distinct field of usefulness for each procedure. Tracheotomy is done when our judgment dictates that intubation will not suffice and sometimes we find that having done intubation our judgment was erroneous. As a rule the younger the patient the greater is the indication for tracheotomy.

Modern direct methods permit us to make a much more correct diagnosis and influences us in discriminating between intubation and tracheotomy and causes less trauma.

In past years we seldom saw a case until it was in extremis, had been laboring for days for breath and was exhausted. Today they are brought into the hospital earlier in their illness. Any child who has suffered for several hours with obstructive dyspnoea and the symptoms increasing in severity should be relieved.

When dyspnoea begins a vicious circle is established congestion and edema may be the first cause and as the child struggles and fights for breath more stasis is established and greater dyspnoea follows. When first seen the child is usually frightened, this also increases the distress. At times oxygen will soothe and quiet the baby and if it can be kept quiet, fed oxygen as required and given cool air it can be watched and perhaps will cough up a chunk of membrane and expel a quantity of thick mucous which will obviate the necessity of interference.

A child with slight dyspnoea if taken into a warm crowded room where the oxygen is diminished will have to pump much harder than if taken out of doors. I have kept them outside and warm in the dead of the winter and tided them over a tight place.

Sedatives must not be given as this reduces the ability of the voluntary muscles of respiration to function.

If you wish to sympathize with these little sufferers just obstruct your breathing to the point where supra and infra sternal and epigastric recession occur on inspiration and you will appreciate their suffering.

INDIRECT INTUBATION

"Hippocarates" mentions the passage of the sounds through the larynx for obstructed respiration, so you see the effort to relieve laryngeal dyspnoea is quite ancient.

Bauchut 1858 produced silver tubes introduced on a sound and attached to a thread for relief of laryngeal obstruction. Numerous changes and improvements were added until O'Dwyer of New York perfected his tubes and technique which have not been surpassed for the indirect method. Not every one who has tried has been able to master this procedure. In order to perform it correctly one must hold the patient in the correct position, must visualize the anatomy of the parts and must cause the tube to traverse the normal deviations of the mouth, pharynx and larynx and must use gentleness personified.

I have seen it done as if by magic and I have seen doctors bloody almost up to their elbows before succeeding in introducing a tube. All forms of trauma must be avoided so far as possible. Numerous sizes and patterns of tubes have been devised for stenotic complica-

tions some being very thin at the neck, some with bulbous end, some with swell in the middle, some cut out behind the head, etc. Great things were accomplished with these tubes but many CHRONIC CASES FOLLOWED. Our impression since the perfection of the technique for tracheotomy and the improvement of tracheotomy tubes is that there are also fewer chronic cases following tracheotomy.

If the patient's condition permits, a general physical examination and history should be procured, A DIRECT INSPECTION OF ITS HYPOPHARYNX AND LARYNX SHOULD BE DONE. This will guide us on our way. The indirect method of inspection is impractical for children.

THE DIRECT METHOD MAY REVEAL

1. A negative hypo-pharynx and larynx and lead us to discover an enlarged thymus, atelectasis, pneumonia, emphysema, recurrent paralysis double or single or foreign body. On the other hand we may observe edema of the glottis, purulent accretions, membranous obstructions, abscess in pyriform sinus, retro-pharyngeal abscess, edema of the epiglottis, sub glottic swelling, acute tonsillitis with large pendulous tonsils blocking inspiration papilloma, catarrhal laryngitis with croup, laryngismus stridulous, this is an affection seldom seen and it is generally observed in neurotic children who have rickets. A few drops of chloroform usually suffices but occasionally intubation or tracheotomy has to be performed. The findings lead us to select our procedure. Tracheotomy in itself carries scarcely one per cent mortality, but the occasion for this operation are serious and this is the reason for a high mortality. The causes of death in this sketch will convince you that most of the cases were doomed from the beginning. Some excellent Laryngologists believe that all of these inflammatory membranous cases are Diphtheritic and that the mixed infections are a complication.

Our experience does not sustain this point of view. We are convinced that there are primary streptococcic and other respiratory types of infection. We believe that all of these cases should be treated as Diphtheria and given single doses of Antitoxin after testing them for allergy. If the laboratory reports show the absence of Diphtheria organisms and the presence of a mixed infection we have not lost anything. The foreign protein will do these cases good.

TECHNIQUE OF TRACHEOTOMY

Patient should be flat on table with a slight pad under the shoulders. One assistant at patients head to elevate the Adams apple. Three lines should be visualized on the neck forming a triangle "Jackson," the base of the triangle on a level with Adams Apple and the apex at the sternal motch. The outside lines of the triangle being near and parallel with the sternomastoid muscle and the center line perpendicular.

The operator tucks his fingers under the patient's chin putting the tissues in the front of the neck on the stretch and with one sweep incises down to the trachea. There is no danger in the midline, there are no important vessels there, occasionally a transverse thyroid vein is cut. If assistants make lateral traction the normal relations are disturbed and disaster may follow. The first ring of the trachea should be identified and the incision should be through the second and third ring, always keeping in the mid line. If there is great dyspnoea and bulging upward of the mediastinal contents it is safer to make the incision from below. Try to have a dry field before incising the trachea but in an emergency incise the trachea and turn the patient on the side. This sounds simple but in an infant dying from an obstructed larynx the venous system is enormously distended, minute veins are dilated and the back pressure causes tremendous bleeding. There is seldom justification to cut the cricoid or the thyroid but it is better for an untrained physician to commit almost any error in order to get air to the patient. Most mistakes can be rectified.

Dr. Ellis Gray once helped me do a tracheotomy on a cabin porch with the baby on an old trunk and only the grandfather to help. Our sponge consisted of a soiled towel. The baby recovered.

Dr. Jackson says a tracheotomy can be done in the dark with a pocket knife.

Do not be alarmed if breathing ceases after opening the trachea, there is often a period of

apnoea. Gently open the incision and wait a reasonable time for breathing to be resumed. Do not insert hooks in the trachea because the ends of the cartilagenous rings may be fractured and dislocated, thus causing future complications.

A cannula should reach well into the trachea, should not impinge on anterior or posterior walls and should have a small air space all around.

Just a word about treatment, do not give sedatives, encourage the cough reflex, the cases which do not cough are the sickest. Force fluids, do not hesitate to keep their little abdomens generously supplied through a needle with N. S. Sol.

Often the intubation or tracheotomy is only the beginning of the trouble. Accumulation of fluid in the trachea requires extubation or bronchoscopic aspiration, this can not be repeated indefinitely and a tracheotomy must follow. At times the patient threatens to drown in their own excretions and aspiration must be done. At times bronschoscopy must be repeatedly performed to remove dried excretions, scabs and plugs of mucous. We did this eight times on an infant and it recovered.

We have found no remedy which effectively prevents the formation of tough bronchial and tracheal excretions. Equal parts of salt and soda in strength of normal salt solution, weak silver solutions, dilute Ephedrine oils have been used with varying success. Food is the main prop in these cases and Glucose Sol. may be used freely intra venously and intra abdominally to tide these babies over a crisis.

Cases in the County given Toxin Antitoxin:

1930	208
1931	220
1932	125
1933	130
Total	683

City Cases:

1930	122
1931	122
1932	394
1933	581
1934	5000
Total	6219

Diphtheria Cases Reported in the City:

1930	49
1931	40
1932	32
1933	49
1934	21
Total	191

County Cases:

1930	5
1931	12
1932	9
1933	6
1934	9
Total	41

40 per cent of these cases were adults.

THE EARLY DIAGNOSIS OF CHRONIC ARTHRITIS

By

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The story of chronic arthritis goes back to the very dawn of history. A study of their fossils demonstrates that the giant reptiles of the cretaceous period suffered from it. The skeletal remains of the earliest races of man show evidences of the disease. A wealth of material exists concerning the prevalence of arthritis among the Egyptians of the time of the Pharoahs. Baths for the treatment of the rheumatoid disabilities have been in continuous existence in France for two thousand years. Today we have only to look around us to see that arthritis is very demonstrably in our midst.

The tremendously wide field for exploitation of sufferers with arthritis is indicated by the fact that there are more than five hundred patented remedies for arthritis being sold through American drug stores, and in Germany the number is said to go into the thousands.

In spite of the impressive age, major importance, and crippling nature of the disease with attendant suffering and economic loss, it has received scant attention from the scientific world, in comparison with many less important

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disturbances. Until recently interest and investigation in this field have not kept pace with the advance of medicine as a whole. During the past few years, however, interest has awakened. This has come largely from a scrutiny of the figures of insurance companies and of health investigations promoted by various governments. In Berlin more persons are invalided from rheumatoid diseases than from tuberculosis. The Massachusetts State Department of Health reported that in 1929, out of a total state population of four and one-half hundred thousand sick people, there were ten thousand cases of cancer, twenty-five thousand cases of tuberculosis, eighty-five thousand cases of heart disease and one hundred and fifty thousand cases of acute and chronic rheumatism. By comparison then, in a New England state, there were considerably more cases of disability from rheumatoid diseases than from heart disease, tuberculosis and cancer combined. One need not pile up statistics to further emphasize the importance of the problem of arthritis. Most of this appalling disability with its tremendous economic loss and expenditure could be reduced by early diagnosis and prompt treatment. Arthritis is often so insidious in onset that the sufferer does not give up work and really undertake treatment until the favorable state for stopping or ameliorating the disease has passed.

At present, there is an awakening interest to the problem and a widespread development of attack against it. Arthritis is now being recognized as one of a great triad of human plagues, of which the other two are syphilis and tuberculosis. In most of the leading countries important committees have been formed for the study, prevention and treatment of the disease. In 1928 the American Committee for the Control of Rheumatism was formed. Since 1930, this Committee has held an exhibit yearly at the meeting of the American Medical Association and distributed literature dealing with diagnosis and treatment. The Committee has formed the following concept of the problem:

"1. The disease chronic arthritis, prevalent in all temperate zones, represents one of the most important, if not the most important, of existing social and industrial handicaps.

2. The Committee conceives of the disease as a generalized disease with joint manifestations. Certain prodromes may be recognized and it is of vital importance that they be recognized.

3. It is the opinion of the Committee that at the present time no single infectious agent or any completely defined dietary deficiency or metabolic disturbance has been conclusively shown to be the sole cause of these disorders. The Committee inclines to the belief that any one of these factors, or certain combinations of these factors, under appropriate circumstances, may basically underlie the onset of the disease.

4. The Committee feels it of vital importance that the medical profession have its attention directed to the methods of treatment of proved value which are at present at its disposal. In spite of etiologic uncertainties, the Committee feels that properly managed therapy, which takes into account both infectious and metabolic factors, has yielded results which encourage optimism and impose the obligation of further developing such methods.

5. In the light of the foregoing considerations the Committee purposes to broadcast, as widely as possible, both to the profession and to the public, its concept of the nature of the types of arthritis included under the heading chronic rheumatism, its belief as to the probable predisposing and exciting causes of the disease, and the knowledge which the Committee possesses or may acquire as to the most efficient methods of treatment."

One of the several reasons why arthritis has been an obscure and neglected entity is that its etiology has been much in dispute and its classification confused. Considerable order has lately emerged from this chaos of uncertainty and one can reduce the various sorts of chronic diseases of joints to a simple and understandable list. It would be presumptuous to say that this classification is perfect and that etiology is clear in each case. However, it is reasonably accurate and workable. Excluded from the scope of this paper are the joint affections of:

(1) Acute rheumatic fever.

(2) Specific infections, such as those dependent upon gonococcal, pyogenic, typhoid and dysenteric organisms, those caused by tuberculosis, and syphilis—and those associated with the exanthemata.

(3) Metabolic and hemopoietic diseases—for example, gout, hemophilia, purpura.

(4) Organic nervous diseases — Charcot joints.

(g) Allergic phenomena of joints—Serum sickness.

Excluding these joints affections which are complications of acute disease—or due to known agents, therefore, one can divide the entire remaining group of chronic arthritides in two main types. These two large groups—although generally agreed upon, have received various names. The titles which are most descriptive are proliferative arthritis and degenerative arthritis.

Proliferative arthritis is also commonly called rheumatoid, and chronic infectious, and not so commonly, atrophic arthritis.

The degenerative type is known as senile, and hypertrophic.

It is now in order to examine more closely these two groups with an eye especially to diagnosis and early treatment.

Degenerative arthritis is a disease of the elderly. It is generally conceded today that the main factor in the development of this type is the "wear and tear" of increasing age and repeated trauma. Bacterial agents and focal infections probably play a minor role. It is by no means impossible for an individual suffering from this type of arthritis to contract an infectious sort of joint disease—thus producing a combined picture. In the vast majority of cases degenerative arthritis presents a pathologic picture distinct from the proliferative type. This consists essentially of degenerative changes in the articular cartilages followed by bony overgrowth in the neighborhood of the joints, mainly the larger joints. Arteriosclerosis may be well marked in the region of the affected joints. The earliest symptom is stiffness experienced after rest and disappearing on movement. In such a type of arthritis as this, early diagnosis can accomplish good,—mainly by reducing trauma. Nothing can be done about the advancing age, but suitable preventive measures, changing of occupation, adequate rest, correct posture, orthopedic measures of overcoming flat feet, etc., all may be utilized to slow the progress of the disorder.

It is particularly toward proliferative or rheumatoid arthritis that this paper is directed, however. Proliferative arthritis is, from the standpoint of early diagnosis—and indeed from every angle, the most interesting and important of the various joint diseases. Proliferative arthritis is the most prevalent of the chronic arthropathies. Cecil and Arthur found that in a series of 612 cases of chronic arthritis admitted to the Cornell clinic for study, approximately two-thirds were of the rheumatoid or proliferative type. The average age of onset was 35. It begins in the first half of life, usually, and therefore its victims are converted into comparatively young invalids. This, of course, makes the disease very important from an economic viewpoint. It is progressive and, if unchecked, proceeds to complete invalidism. It is connected, in the minds of most students, in some way, with foci of infection—and therefore, early diagnosis and treatment is imperative. It apparently is a generalized disease with local joint symptoms. It is, therefore, highly important to note carefully the prodromata which precede the typical joint changes. Proliferative arthritis apparently needs a "soil" and a "seed" for its development. The "soil" consists of the constitutional background of the individual. A certain type of body build seems to predispose individuals to proliferative arthritis. These persons are generally tall, slender, flat-chested and enteroptotic. Other predisposing changes in the "soil" include, faulty body mechanics, dysfunction of the digestive tract, excessively and inadequately balanced food intake, pregnancy and prolonged exposure to elements.

The question of the "seed" is obscure. Proliferative arthritis is defined as being "of unknown origin." It is the consensus of opinion of the American Committee for the Control of Rheumatism "that no organism can be consistently isolated from the blood or joint tissues in chronic arthritis." However, practically every student is in agreement on the importance of focal infection in proliferative arthritis. In the first place, in most carefully studied series of cases, 70 to 80 percent of individuals have a definite focus, or give a history of one. Secondly, the clinical course of rheumatoid arthritis

is strongly suggestive of an infectious disease, and the lesions in the joints are essentially inflammatory, and similar to those in other well known infections of the joints. There are many other factors which might be cited in support of this contention—for example—the increased sedimentation rate, and the leucocytosis.

The pathological changes are seen most typically in the phalangeal joints. They are at first limited to swelling in the soft tissues producing a spindle shaped enlargement. The first change in the joint proper consists of a swelling and proliferation of the synovial membrane. The membrane becomes converted into a layer of granulation tissue which extends over the joint cartilage and is known as a pannus. The subchrondral layer also becomes inflammatory —and the articular cartilage is destroyed between these granulating areas. After loss of the cartilage, the inflammatory changes lead to partial or complete obliteration of the joint cavity with subsequent fibrous or bony ankylosis. Bony changes, when they do occur, develop later.

Symptoms of proliferative arthritis embrace the early, pre-arthritis prodromata, so important for early and adequate treatment. Vague malaise, a leaky skin, shifting pains from one joint to another, a rapid pulse, early fatigue, especially in a thin ptotic type of individual should arouse the suspicion of proliferative arthritis. There may be paresthesias, such as numbness or tingling of the extremities, burning or itching of the skin, together with coldness and frequently sweating of the hands and feet. The onset may be sudden or gradual. According to McCrae in about one-third of the cases there is sudden onset with fever, headache, malaise, with the swelling of several joints. The spleen may be enlarged and glandular enlargement is often present.

In the majority of cases, however, the onset is gradual and after the prodromata spoken of above, symptoms are usually present in only one joint. Gradually the soft tissue of the joint assumes a fusiform or spindle shape. While remissions and exacerbations are common—the disease slowly but surely assumes a chronic form —and takes on the characteristic features of proliferative arthritis.

Since it is generally agreed that the most important single factor in the treatment of rheumatoid arthritis is the removal of the foci of infection it behooves the clinician to undertake the study of his cases of chronic arthritis as early as possible. It is sheer folly to hope that a well advanced case can be modified by the removal of a primary focus. Had that focus been eliminated months or years before, there is much conservative evidence to indicate that much more would have been accomplished.

Diagnosis is made upon the history, the physical make-up, and the type of joint change. Much aid is secured from the x-ray. At an early stage this shows lessening of joint space. This will be shown in the lantern slides. The other x-ray changes are later—and not of interest in an attempt to appraise early symptoms and signs.

A few laboratory procedures are directly helpful. Of these a moderate anemia, a slight leucocytosis, with shift to the left, and an increased sedimentation rate are the ones which are available to the average practitioner.

Stress may well be laid upon the following summary of facts concerning arthritis.

(1) Chronic arthritis is one of the major social handicaps confronting us today.

(2) Proliferative or rheumatoid arthritis is the most prevalent and important of the crippling diseases of joints.

(3) Proliferative arthritis is a generalized progressive disease with local joint symptoms—occurring in the first half of life.

(4) Rheumatoid arthritis needs a "soil" of faulty constitutional make-up and a "seed," the exact nature of which is unknown. It is almost universally conceded that focal infection accounts for the entry of the "seed."

(5) To arrest the progress of this disease early diagnosis is imperative.

(6) Diagnosis can be accomplished by a consideration of the prodromata plus a study of the early joint changes—and certain laboratory procedures.

(7) Early diagnosis, with the removal of foci of infection and the institution of suitable treatment, offers the best method for the curing or checking of an otherwise progressive crippling disorder.

TUMORS OF THE BRAIN: A BRIEF REVIEW OF THEIR PATHOLOGY*

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In recent years there has been a great advance in the diagnosis and treatment of tumors of the brain. Heretofore, a large proportion of the diseases of the central nervous system were masked and unrecognized. Today, many tumors of the brain are successfully removed, while many others are improved. Clinically, most tumors of the brain may be considered malignant, although many are benign. The complete removal of these benign lesions often results in cure. All growing tumors within the cranium produce serious disability and eventually cause death if they are not treated.

SYMPTOMS

The symptoms produced by intracranial neoplasms are usually divided into two groups: (1) those which result from increased intracranial pressure, and (2) those which result from a disturbance or destruction of a cerebral center or pathway. The symptoms of increased intracranial pressure are characterized by headaches; occasionally, local tenderness over the neoplasm; vomiting which is projectile in character, and choked disk or what is frequently known as papillo-edema. Nausea does not occur.

Localizing symptoms naturally are varied and numerous, depending on the situation and size of the tumor. Tumors involving the frontal lobe, and particularly the left frontal lobe, of right-handed people, are prone to give rise to changes in personality. Tumors in the chiasmal region produce defects of the visual field. Tumors which arise in the vicinity of the motor cortex produce jacksonian convulsions, while those situated more deeply in the substance of the brain produce monoplegia or hemiplegia. The symptom complex depends on the situation and size of the tumor. Roentgenologic studies, especially pneumoventriculography and encephalography, contribute much information concerning the situation of cerebral neoplasms. Ocular palsies and other involvement of cranial nerves occur when the lesions involve either the nucleus of the nerve, the nerve pathways, or the nerves themselves.

CLASSIFICATION OF THE GLIOMAS

The classification in use today, which is not entirely satisfactory, is based on the present scheme of histogenesis. The beginning or anlage of the central nervous system is differentiated early in embryonic life into the medullary epithelium. Three principal cellular types, namely the ependymal epithelium, the spongioblasts and the neuroblasts are derived from the medullary epithelium. It is thought by some investigators that the spongioblasts also may be derived from medulloblasts. The neuroblasts may also be derived from the medulloblasts and the oligodendroblasts are derived from the ependymal epithelium.

The "blastic" form of the cells of these tumors represent the more immature or undifferentiated cells, while the "cytes" represent the more mature and differentiated cells. The spongioblasts (glioma) which make up the largest number of these tumors encountered are divided into four groups. The most malignant is the spongioblastoma multiforme; the next in the order of their malignancy are the polar spongioblastoma, the astroblastoma, and the astrocytoma. Their names more or less indicate the morphology of the particular predominating type of cell. Sometimes, a heterotopic mass of brain tissue is difficult to distinguish from a true tumor.

PATHOLOGY

The components of the astrocytoma are adult astrocytes, which have undergone some modification. These cells are usually star-shaped; two varieties are described in the literature, the protoplasmic and the fibrillary. Many varieties of cells may occur in different parts of the same tumor. A diffuse type of tumor may occur, which may be intimately mixed with the more or less normal brain tissue; and such a condition may be spoken of as gliosis.

The astroblastoma is about midway between the spongioblastoma and the astrocytoma. This tumor and the more differentiated astrocytoma are usually firm, but cystic degeneration often

*Submitted for publication April 4, 1936.

occurs; the fluid is straw-colored and if allowed to stand, congeals. Microscopically, the tissue is of a loose texture, and cells surround numerous blood vessels which have thickened walls. In special preparations the cells are seen to have a thick process of varying length, which extends to a blood vessel where it ends in the typical so-called "sucker foot."

The spongioblastoma is firm and seldom undergoes cystic degeneration. This tumor sometimes closely resembles the acoustic neurofibroma, especially the so-called unipolar type. However, on closer examination, hyperchromatic nucleoli and mitotic figures are present in the former, and there is less intercellular reticulum than there is in the latter.

One of the most common tumors, which occurs at all ages, is the spongioblastoma multiforme (gliosarcoma of the older literature). Tumors of this type have been observed to arise from tumors regarded as astrocytomas. Mixed tumors are frequent; this often accounts for variation of symptoms and their duration. These cells of spongioblastoma multiforme are round, ovoidal or irregular in shape; the nucleus and cells are variable, and all transitions occur between such cells and giant cells. These cells of the tumor may be arranged radially about necrotic regions or vascular channels, and endothelial proliferation in the blood vessels may occur. Sometimes there is a syncytial appearance.

There are two types of tumors which arise from the ependymal cell. The first represents the adult ependyma, which retains the adult shape and form of columnar cells, and forms canals or tubules. The second type is less mature and slightly more malignant than the previous type. Both types are essentially slowly growing tumors and the latter type sometimes produces a large amount of colloid or mucoid-like material in the spinal cord which may grossly simulate a perforated colloid carcinoma of the large intestine.

Oligodendrogliomas are composed of oligodendroglia. Masses of these cells are seen, which contain small round hyperchromatic nuclei. These cells may occur singly or may be enclosed in groups by a dense stroma which produces a peculiar fenced-in effect. The tumor frequently contains calcium. Endothelial hyperplasia may be present in the blood vessels. These tumors are rare.

The medulloblastoma is the most common rapidly growing malignant tumor which occurs in the cerebellum of a child. This tumor also may occur in the cerebrum of adults. The typical cell is small, round, oval, or oblong; it has a dense chromatin network and seldom contains mitotic figures. Sometimes the cells are arranged in the form of rosettes. The so-called medulloblast, which is possibly a cell of embryonal type, responds well to roentgenotherapy. Metastasis of medulloblastoma by implants sometimes occurs along the spinal column.

Ganglioneuroma is rare in the brain and is composed of numerous neurocytes of varying size and structure, and many multinuclear cells. Neuroblastomas and neurocytomas are also rare.

In sarcoma, which is also rare, there are few blood vessels, a marked intermingling of large oval and oblong cells, hyperchromatic nuclei and evidence of mitosis. A sarcoma grossly is better outlined than is a rapidly growing spongioblastoma multiforme, from which it must sometimes be distinguished.

The symptoms of a hemangio-endothelioma, or "blood tumor," which are similar to those of a more solid tumor, are caused by the invasion of vital areas and the resultant pressure. This tumor is soft, spongy, vascular, and irregular. Microscopically it is composed of irregular vascular spaces which are lined with endothelial cells of different sizes and activity, depending on the degree of malignancy. The size of the vascular spaces varies; usually the spaces are of the capillary variety.

The more usual tumors which occur in the region of the midbrain are adenomas and adenocarcinomas of the pituitary body and pineal body, and chordoma, which is an embryologic tumor which arises from cells of the notocord, which resemble cartilage cells. In this region, one also finds the remains of Rathke's ectodermal pouch, which occasionally gives rise to cystic tumors. From the hypophysial stalk or duct arises the epidermoid carcinoma or adamantinoma. A papilloma of the choroid plexus

must sometimes be differentiated from the latter tumors.

The usual pituitary tumor arises from the anterior portion of the pituitary body and is associated with an excess of so-called chromophobe cells. The more usual symptoms are headache, which is usually frontal or supraorbital; visual disturbances which usually are bitemporal and hemianoptic, and disturbances in sexual development and general physical development, which are associated with hypopituitarism. These tumors are equally distributed among males and females and are usually recognized in adult life. There is nearly always erosion or destruction of the floor of the sella turcica which can be seen in the roentgenogram.

Metastatic carcinoma occasionally occurs in the brain and may produce symptoms and signs similar to those of a primary tumor. The most common metastatic lesions come from the lung, breast and suprarenal glands.

TUMORS DERIVED FROM DURA AND NERVE SHEATHS

Nearly all of the benign tumors which involve the nervous system arise from its sheaths. It is a striking characteristic of these encapsulated neoplasms that they cannot invade nerve tissue. On the contrary, tumors that arise within the central nervous system infiltrate nerve tissue but do not break through the meninges; they rarely invade the blood vessels so as to give rise to metastasis.

The common tumors of the nerve sheath are the meningeal endotheliomas (meningiomas) which arise from both spinal and cerebral meninges, and neurofibromas which are found on peripheral nerves and nerve roots.

Meningeal endotheliomas (meningioma) ordinarily grow to a considerable size. The tumor is almost invariably attached to the dura, is rounded, frequently presents knobs, and is covered with a capsule. The tumor is firm and elastic; cysts form rarely in such tumors. Some of these tumors contain many psammoma bodies (psammoma) and in rare instances there may be ossification within the tumor.

Microscopically meningeal endotheliomas are composed of cells that have nuclei which are large, rounded or ovoid and which contain a dark chromatin network. The cells tend to arrange themselves in columns or groups. Throughout the tumor the cells have a tendency to form layers about various structures. Thus, the cells are frequently gathered together in whorls, which perhaps are the most typical feature of their microscopic appearance. These whorls may be arranged about collagen fibers or about a small vessel. Degeneration not infrequently takes place at the center of these whorls, and psammoma bodies are found in the whorls.

The cells of the more rapidly growing endotheliomas are likely to be arranged in columns, and the amount of whorl formation is small. Mitotic figures are occasionally seen in these tumors.

Meningeal endotheliomas are benign encapsulated tumors which do not metastasize. They do not invade the brain or spinal cord, but are attached to and invade the dura mater and skull.

The neurofibroma is an encapsulated tumor. The capsule is shiny and thin. The tumor is rounded and often presents knobs, which are either hard or cystic. Such tumors do not grow to a large size as a rule. Their color is brownish yellow at operation and those which grow on the acoustic nerve are nearly always yellow, probably because they usually undergo myxomatous degeneration and contain blood pigment. On section, these tumors are likely to contain multiple foci of degeneration, which produces an irregular color. There may be small cysts which have a smooth lining. Colorless gelatinous regions are not found in these tumors, as they so frequently are in genuine neurofibromas. The tumors are usually vascular and are attached to a nerve or nerve root; the fibers of the nerve pass in the capsule about the tumor.

The most easily recognizable feature of the microscopic structure of a neurofibroma is the palisade formation of the nuclei. In addition, they tend to be arranged in linear patterns as though they were passing through the neoplasm. The nuclei are often arranged in large whorls; the appearance of small whorls such as those which are seen in meningeal endotheliomas is rare. The nuclei are likely to be curved or elongated.

These tumors are supposed to arise from the sheaths of nerves or nerve roots. They are be-

nign in that they do not metastasize. They may recur locally unless removal is complete. It often is impossible to remove the tumor completely and preserve the nerve. A meningeal endothelioma is sometimes difficult to distinguish from a neurofibroma.

Intracranial neurofibromas which affect the acoustic nerve are fairly frequent, and more often occur singly. They may be associated with a neurofibromatosis (von Recklinghausen's disease), which is considered as a systemic disease. This is manifested by the appearance of tumors on the peripheral nerves and nerve roots. The condition is considered hereditary. The nerve to which the tumor is attached may be seen to enter at one side and leave the tumor at the other, as a fusiform swelling. The tumors are covered with a smooth thin capsule and they are, as a rule, easily dislodged from the surrounding tissue. They are firm, but gelatinous degeneration may occur.

Microscopically, they vary greatly. There may be tangled reticular areas in which the nuclei are not arranged in any particular order, with an abundance of connective tissue. Nerve fibers may occur singly or in bundles, and are wavy. The presence of nerve fibers within the tumor may be considered pathognomonic of genuine neurofibromas, as such fibers cannot easily be demonstrated in the neurofibromas which arise from nerve sheaths.

DIFFERENTIAL DIAGNOSIS

Inflammatory lesions, particularly abscess, syphilis and tuberculosis must be distinguished from a tumor of the brain. Concomitant lesions should always be considered. Intracranial pressure which is the result of syphilis (gumma) usually subsides when effective therapy is employed. Tuberculosis in the form of a tuberculoma is usually multiple and secondary to pulmonary infection. Blastomycosis, when systemic, may produce an abscess of the brain.

Tumors of the brain may occur at almost any age and may affect either sex. The slowly growing tumors may be present for a long period and may grow to considerable size before they are recognized clinically.

The benign tumors, such as the neurofibromas and meningiomas, usually occur between the ages of thirty and sixty years. Gliomas affect patients who are between six and sixty-three years of age. Medulloblastomas usually occur before puberty.

A glioma may arise in any lobe of the brain and a meningioma (endothelioma) may arise from any part of the dura.

THERAPY

The two principal forms of therapy are operation and irradiation. The two may be used together or either may be employed alone, depending on the pathology. Many inoperable tumors are improved by irradiation or decompression, which relieve symptoms and prolong life. Operation offers a fair chance for remission of symptoms over a period of years, and in some cases this results in almost complete cure, depending on the nature, extent, and amount of tumor removed.

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APRIL, 1936

COMING MEETING IN GREENVILLE

APRIL 21, 22, 23

The Association was founded in 1848 in Charleston; but while the first meeting was held in Charleston, many have been held in Greenville during the eighty eight years of its existence. The most outstanding was held there in 1905, when the State Society became a part of the great reorganization plan of the American Medical Association. Since that time the parent organization has grown until it now numbers some one hundred thousand.

The meeting in 1905 authorized the publication of the Journal. The first issues were printed in Charleston, and at different times for a few years the Journal was published in Columbia, Anderson, Seneca, and possibly elsewhere. For about twenty years of the life of the Journal the printing and mailing has been done in Greenville by one firm or its immediate successors. We wish to call attention to the high class work and keen interest manifested by our printers over such a long period of time. The publication of a medical journal, owing to many technical problems involved, calls for great skill on the part of everybody concerned with it.

The South Carolina Medical Association has made great strides since the memorable meeting of 1905. Then the membership numbered only two or three hundred, whereas now we have an average of seven or eight hundred.

The program this year has many features to commend it. First of all, it is wide in scope. The general practitioner has been kept in mind by the Scientific Committee and the officers of the Association. The specialist has been kept in mind also. The program has been limited in order that each essayist may have a satisfactory hearing.

As usual we are favored by distinguished guests. Dr. George W. Crile, of Cleveland, will deliver the address on surgery. Dr. Crile is a master surgeon known around the world. Dr. William B. Porter, of Richmond, is well known throughout the country as an internist and professor of medicine in the Medical College of Virginia.

There will be other attractions such as clinics and also ward walks at the Shrine Hospital. The Woman's Auxiliary has an unusually interesting program. The public health workers also have a creditable program. The luncheon of the Medical College Alumni keeps the profession informed about medical education each year. Then there will be the big dinner for all the members of the Association at which Honorable Neville Bennett, Chairman of the Ways

and Means Committee of the House of Representatives, and Dr. George W. Crile will be the principal speakers.

The House of Delegates will meet on Tuesday evening, April 21, at eight o'clock. The problems before the House in some respects may not be as acute as was the case at Florence last year, but they will be of great importance. We have an ever enlarging public health program in South Carolina. Aside from the routine reports of the regular standing committees there are special committees who have spent a year or more studying particular problems committed to them by the Association. One of these is the report of the Committee on Maternal and Infant Welfare. Other special committees reporting will be the Committee on Cancer, the Committee on Hospital Care, and the Committee on The Workmen's Compensation Law. Another Committee of great interest is that of the Medical College. Then there is the ever present problem of medical economics to be considered.

There are not so many elections as we had at Florence last year, but they are always of great importance, and careful consideration should be given to them.

We wish to express our gratitude to many friends who have contributed to this special Greenville number of the Journal.

YORK COUNTY MEDICAL SOCIETY

"Ladies and Doctors" night as observed here by the members of the York County Medical Society, their wives, and a number of invited guests, constituted one of the most interesting and thoroughly pleasant occasions of the entire Winter social season in York. Every person in attendance appeared to enjoy every detail of the program which was carried out minus the slightest hitch.

The event took place in the McNeel Memorial building of the First Presbyterian church of York, the entire attendance being 70. In addition to the physicians and their wives, Carl H. Hart, Miss Doris Young, Mrs. Minnie Moore, and Dr. and Mrs. Harrison were invited guests. Particularly honored guests of the occasion were the widows of four former distinguished physicians of the county, these being Mrs. W. W. Fennell and Mrs. J. R. Miller of Rock Hill; Mrs. J. D. McDowell and Mrs. W. G. White of York, to all of whom high tribute was paid by those in attendance.

The dinner table was a thing of beauty, being arranged in a doctors' green cross while all the decorations throughout the dining room followed the green and white motif of the medical profession. The elaborate dinner, which was calculated to please the palate of any epicure in existence, was served by the York Legion Auxiliary of the American Legion and it left nothing to be desired in this direction.

Music was furnished before and after the supper, both vocal and instrumental by the young lady members of the faculty of the York high school and this constituted one of the outstanding features of the evening and proved to be most enjoyable. The young ladies all acquitted themselves with rare credit.

Carl H. Hart, a former commander of the Meech Stewart post of the American Legion introduced the speakers of the occasion, these being Maj. W. F. Robertson of Greenville, S. C. and Dr. Oren Moore of Charlotte, N. C.

The speakers spoke, for the most part, in light vein, with a considerable amount of wit and humor interspersed at various intervals and they held the closest attention of their hearers throughout the brief period allotted to this portion of the program.

It was the consensus of opinion on the part of all those participating in the gayeties and festivities of the evening that the county medical body has never held a more thoroughly delightful, interesting, and pleasant occasion than "Ladies and Doctors" night proved to be and plans are now being considered for making it an annual event here.

John I. Barron,
Secretary.

Greenville County After 150 Years

March 22, 1786, the South Carolina General Assembly passed an Act creating Greenville county out of territory which nine years prior had been wrested from Cherokee Indians by force of arms on the part of the patriot forces.

Twenty-second county of the state in point of age, Greenville ranked first among the 46 counties of South Carolina in point of population at the time of the decennial census of 1930, having a total population of 117,009.

During the decade 1920-'30 Greenville county rose from third to first place among South Carolina counties in number of inhabitants, having a net gain during the period of 28,511 people. This represented an increase of 32.2 percent in population over the preceding census.

Not only was Greenville county's population gain during that decade the greatest of any county, both as to numbers and rate of increase, but the increase accounted for 51.8 percent of the growth of the state of South Carolina during the ten-year period.

The center of the vast cotton textile manufacturing industry of western South Carolina, Greenville county years ago earned the sobriquet of "Textile Center of the South" by reason of its being at the geographical center of the industry which dominates the piedmont section of the states of North Carolina, South Carolina, Georgia, and Alabama.

While the county's thirty-odd textile plants—employing more than 15,000 wage earners, with annual wages in excess of $10,000,000, and turning out products each year valued at more than $34,000,000—is in itself highly important, Greenville enjoys a record as a retail and wholesale trading center which places her at the top of counties in South Carolina.

Latest available records of the U. S. Department of Commerce show the following volume of retail trade for each of four leading counties of the state:

Greenville	$22,467,000
Charleston	18,648,000
Richland	17,065,000
Spartanburg	15,301,000

Figures as to volume of wholesale trade by counties are even more impressive, these being as follows:

Greenville	$33,924,000
Charleston	31,935,000
Richland	26,254,000
Spartanburg	13,107,000

Not only is Greenville county supreme among counties of South Carolina in the fields of retail and wholesale trade, but the county occupies an enviable position among counties of North Carolina and Georgia Of the 307 counties in the two Carolinas and Georgia, the county of Greenville ranks fourth in volume of retail trade and fifth in volume of wholesale trade. Fulton county, Georgia, and Mecklenburg and Guilford counties, North Carolina, alone rank Greenville county in volume of retail trade. In wholesale trade volume, Greenville is ranked only by the four following counties, in the order named: Fulton county, Ga.; Mecklenburg county, N. C.; Chatham county, Ga.; and Guilford county, N. C.

Greenville's commanding position as a trading center is accounted for, in part, by the county's location with reference to the rich and prosperous industrial and agricultural region comprising the western tiers of counties in South Carolina. Within one and one-half hours drive from Greenville by motor car are situated 72 incorporated towns and cities, all connected by hard-surfaced roads. Population of this compact area was, according to the Census of 1930, 581,477. Of this number 71 percent are white people.

Social aspects of the picture are no less appealing than the economic. Greenville county enjoys a delightful year-round climate, its elevation ranging from 1,000 to more than 3,200 feet above sea level. Average annual temperature of 59.1 degrees and average annual precipitation of 53.18 inches, coupled with altitude, makes for comfortable living at all seasons of the year.

For more than a century Greenville has been known as a religious and educational stronghold. Greenville Woman's College, founded more than one hundred years ago, and Furman University, removed to Greenville in 1851, are both

standard A-grade institutions. The combined enrollment of the two colleges is approximately 1,000. The schools are co-related. Greenville's public school system is outstanding among southern school units. The city school system and the system known as the Parker District, the latter comprising, for the most part, industrial areas adjacent to the city, have a combined enrollment in excess of 16,000. Equipment as well as standards of teaching in both systems is of the very highest.

More than 90 churches, representing practically all well-known denominations, are to be found in the city and immediate suburbs of Greenville.

Greenville county's sesqui-centennial anniversary finds a community emerging rapidly from the depression. All her industries are operating on full time, the building trades are witnessing activity unlike anything seen since 1929, and retail and wholesale interests report levels are constantly rising. Volume of real estate transactions, both as to sales and amount of money involved, eclipses any year of the depression era.

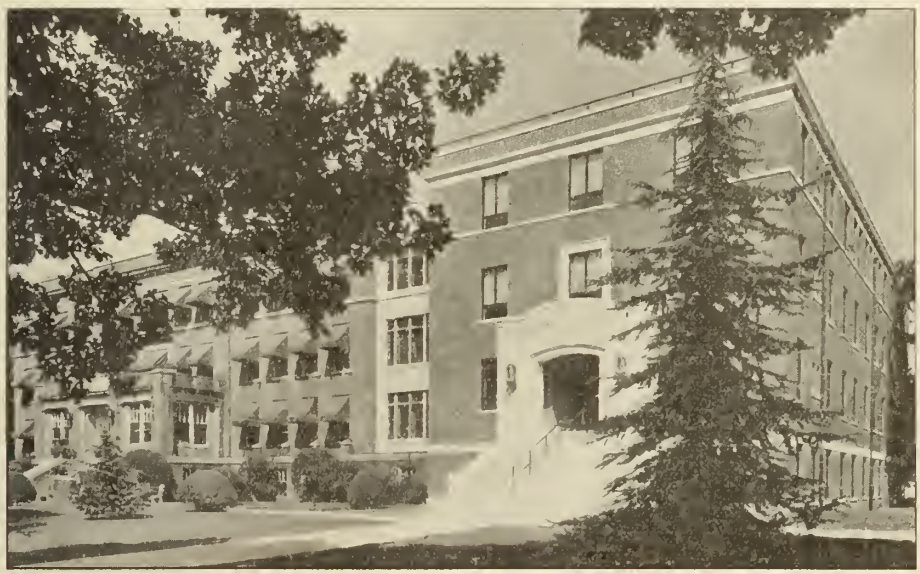
As Greenville county swings into the one hundred and fifty-first year of her existence as an integral part of the state of South Carolina she entertains high hopes of maintaining her record as a leader in the galaxy of 4 counties of South Carolina.

THE GREENVILLE GENERAL HOSPITAL

The original hospital was organized and the first building constructed in 1894, with funds raised by the Knights of Pythias; this building was not purchased by the City of Greenville until the year 1917. In 1919 the City of Greenville built a fire-proof addition to the old building, which is now the center unit of the present plant.

The present Board of Governors was appointed by City Council in 1930. The Mayor and one other member of council is represented on the hospital board.

The school of nursing was organized in 1912.



GENERAL HOSPITAL

During that year twelve student nurses were accepted for training; however only three of the twelve graduated. We now average fifty-four student nurses in training per day.

Since 1930 the capacity of the hospital has been increased from 100 to 200 beds. A new private wing named for Dr. J. Marion Sims was completed in 1935. The Duke Endowment contributed $55,000 toward the total cost of the building, which amount was $127,000.00.

Our hospital is graded "A" by the American Medical Association and the American College of Surgeons. The training school is meeting all of the requirements of the League of Nursing Education.

We have two residents and five interns on our hospital personnel.

The physical plant and grounds of our hospital have been greatly improved in the last few years. Every department has been enlarged and new equipment added.

Each year we have made decided improvements in our training school. Our standard for admission of students is higher. Besides a director of nurses, we have two full-time instructors, one who teaches the sciences and one who teaches the practical nursing and does the follow-up work. We have nine graduate nurse supervisors, five of whom have had post-graduate work in the larger hospitals up east, and two graduate dietitians. Every member of our staff is a member of all the nursing organizations, state and national.

A five year course has been inaugurated with G. W. C. and Furman University for those young women who wish to acquire their B. S. and nursing degrees at the same time.

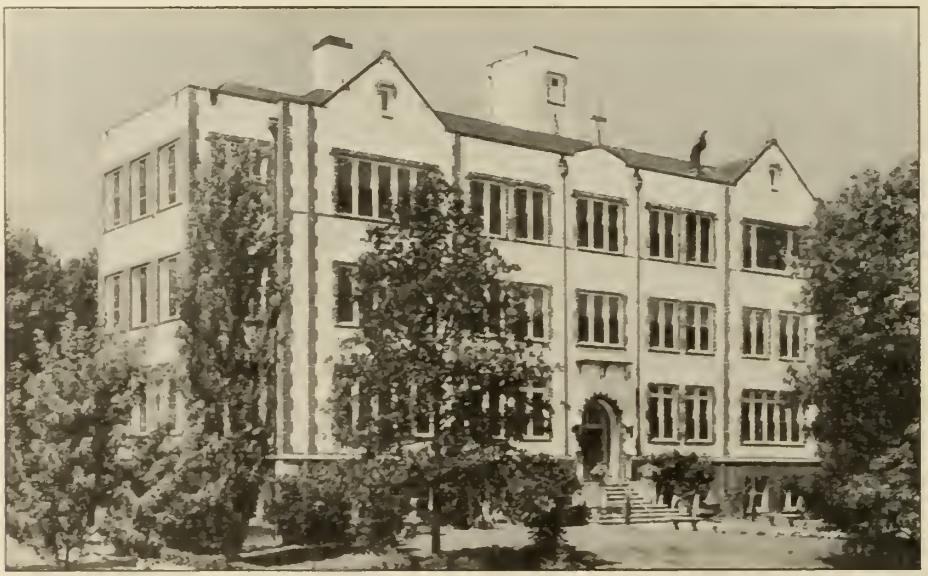
In our out-patient department we hold the following clinics weekly: Ear, Eye, Nose and Throat, Genito-Urinary, Medicine and Surgery, Orthopedic, Gynecology, Pediatric and Prenatal. Since 1929 the number of clinic visits per year has increased from 8,459 to 23,809 in 1935.

ST. FRANCIS HOSPITAL

Through the efforts of Mr. Thomas F. Parker, a public-spirited citizen of Greenville, and the donations of cotton mills in this area and the Salvation Army, this hospital was built in 1920.

It was orginally built for women and children, and contained a home department for unfortunate girls.

About 1924, it was changed to a strictly general hospital, and was known as the Emma Moss Booth Memorial Hospital until its close in October, 1931.



ST. FRANCIS HOSPITAL

The Sisters of the Poor of St. Francis purchased the building, February 8, 1932. After being thoroughly renovated and remodeled, it was formally opened July 14, 1932, as the St. Francis Hospital. The first patient was admitted July 18, 1932.

After one year, it became necessary to enlarge the hospital, and with the aid of a gift from the Duke Endowment, amounting to 40 per cent of the total cost, construction was begun March 1, 1935, and was completed November 3, 1935. The hospital now has a capacity of 100 beds.

The Duke Foundation has been most liberal in its help to this institution and very compli-

mentary in its praise of the type of work that is being done. The doctors of Greenville have been untiring in their efforts and have given excellent service in helping this institution in its work.

Since the hospital was taken over by the Sisters of the Poor of St. Francis, it has treated 8157 patients, 40 per cent of whom have been charity. This amount of charity work has been made possible only by the dollar per day allowed by Duke Endowment, by the faithful service of the Medical Staff, and by the services of eleven Sisters, gratis.

Dr. J. W. Jervey is Chief Surgeon and has associated with him Dr. J. W. Jervey, Jr. Miss Louise Martin has been surgical assistant for many years, and the hospital is superintended by Mrs. Helen Markwell. Visiting doctors will be welcomed at all times.

THE MATERNITY SHELTER

The Emergency Maternity Shelter of the American Women's Hospitals was an outgrowth and remains a very important part of the infancy and maternity program conducted through the joint sponsorship of the local committee and the American Womens Hospitals. The Maternity Shelter was chartered as a hospital under the laws of South Carolina in January 1934. It had, however, been in existence since 1929. Mrs. J. W. Jervey, one of Greenville's most progressive and beloved women, who has since died, was the President of the local hospital board. Dr. Esther Lovejoy is Chairman of the National Board.

The purpose was and is to provide pre-natal care, safe delivery and post-partum care for normal multiparous, expectant mothers, whose home condition, first, are so destitute as to make delivery there unsafe. Secondly, it offers to those who live far from medical care and aid, a



JERVEY HOSPITAL

DR. JERVEY'S PRIVATE HOSPITAL
Greenville, S. C.

This institution was organized in 1918 and was moved to its present location at 101 Church Street in 1923. Work is limited to the field of ophthalmology and otolaryngology. Equipment is complete with laboratory facilities, x-ray, and a giant magnet for the extraction from the eye of metallic foreign bodies. Only graduate nurses are employed, at present four being on full time duty, other help being arranged for as needed. The hospital is rated at a capacity of fifteen beds and is arranged to care for any condition arising in diseases of the eye, ear, nose and throat, except that the acute contagious diseases of childhood are not admitted.

waiting place as well as efficient and prompt attention. Third, it provides privacy and rest for mothers whose homes are so crowded as to make this utterly impossible. All abnormal cases are sent to the hospitals for delivery.

The Staff consists of Dr. Chas. Wyatt, Medical Director, Dr. Hilla Sheriff in charge of maternal health and well baby clinics, Dr. Lonita Boggs, pediatrician, consultant, Emily Passmore Nesbitt, supervisor American Women's Hospital nursing activities as well as two graduate nurses and three aides.

The Maternity Shelter building is a remodeled home consisting of clinic and delivery rooms, ward and nursery, shower and kitchen. Our usual capacity is eight mothers and eight babies. This can be enlarged if necessary. The equipment is simple but adequate. All goods are sterilized at hospitals and supplies are sold by them to the Shelter at cost. Parker District Board of Educators owns the building which together with lights, coal and water are given without cost. Parker cafateria supplies the noon day meal at a minimum charge. Milk is given by a local dairy. The laundry is done at a low rate. The cost of operation is kept reasonably low.

The patients are referred to the clinics by family doctors, welfare agencies, hospitals and ex-patients. All are so called charity families. This, of course, applies only to the patients in The Shelter for delivery and care and not to the entire program which is primarily one of health and education.

The financial responsibility was originally assumed entirely by the American Women's Hospitals but it has gradually been shared by many local groups under the leadership of the Emergency Maternity Shelter Hospital Board, The Community Chest, the County, the Duke Endowment, The American Legion Auxiliary, St. Pauls Methodist Church Circle No. 1, The Christ Church Guild, Parker School District, The Junior Charities and individuals who are interested in helping to make motherhood safer are now assisting the American Women's Hospitals which is the medical service committee of the Medical Women's National Association. The American Women's Hospital is entirely responsible for the major salaries of the personnel of both the Shelter and the allied health services. These services include pre-natal classes and clinics, well-baby clinics, medical and nursing care for the sick infants, maternal health clinics, adult health classes and demonstrations. Through cooperation and coordination assistance is provided in rehabilitating the homes as well as families.

Therefore, though The Maternity Shelter is a hospital it is part of a program which is manifold and covers completely the maternal and infancy periods of life.

Emily Passmore Nesbitt, R.N.

SHRINERS' HOSPITAL

The Greenville unit of the Shriners' Hospitals for Crippled Children has been in active operation since its opening, September 1, 1927.

Mr. W. W. Burgiss, a Greenville citizen, gave $350,000 which was used to build and equip the hospital. The maintenance of the hospital costs $60,000 a year which has been met so far by the dues of Shriners, the help of the Duke Endowment and voluntary contributions.

Treatment at Shriners' Hospital is absolutely free. Any crippled child who meets certain requirements is eligible:

1. He must be under 14 years of age.
2. Normal mentally.
3. Unable to pay for treatment.
4. Must show promise of cure or considerable improvement.

The hospital is continually filled with 60 happy boys and girls each receiving treatment for some deformity or some bone disease. In spite of plaster casts, braces, and other strange-looking appliances, the children laugh and play and enjoy their hospital experience.

Over 3000 children have been treated at the Shriners' Hospital in Greenville during the past 8 1-2 years. There are 175 on the waiting list—these are being admitted in turn just as fast as beds are available. Applications from other afflicted children continue to come in on an average of one a day.

Visitors are welcome at the Shriners' Hospital every day between the hours of 10 and 11 A. M., and 3 and 4 P. M. The hospital staff is glad of the opportunity to explain the interesting work as it goes on in the hospital and the children greet visitors with smiles of friendliness.



SHRINE HOSPITAL

A SKETCH REGARDING THE HISTORY OF THE GREENVILLE COUNTY TUBERCULOSIS SANATORIUM, AND SOME OF THE MOST IMPORTANT FACTS ABOUT IT

Prior to 1930 Greenville County had a small tuberculosis Hospital but, not adequate to care for the tubercular patients of the County. Some interested folk collated plans whereby a New Sanatorium might be built, adequate to care for both White and Negro, Adults and Children. Bonds were floated and money provided for such an Institution.

The Greenville County Delegation at its meeting Dec. 13, 1927, elected Seven Trustees for the New Tuberculosis Sanatorium which was to be built. The Delegation acted pursuant to an Act number 165 approved in April, 1926, These newly elected Trustees were divided into Committees and did some real work in the interest of the Institution.

The plans went forward and a Tract of Land located just off the Spartanburg Road, about five miles from the City of Greenville, on Piney Mountain was selected and bought for the building site.

The building was completed August the First, 1930, which had a bed capacity of 70. A Ward for White Women, with a bed capacity of 19; A Ward for White Men with a bed capacity of 19; A Ward for White Children with a bed capacity of 16, eight for boys and eight for girls; A Negro Ward, consisting of five beds for men, five beds for women and five beds for children.

On August the fourth, 1930, twenty-four patients were brought over from the old Hopewell Hospital, and this was the opening day of the New Sanatorium.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"NERVOUS COMPLICATIONS FOLLOWING SPINAL ANESTHESIA"

Spinal anesthesia is a generally used procedure. Its advantages are too well known to need mentioning, so much so that some of the disadvantages are almost completely overshadowed. These latter should not be lost sight of, for only by a thorough knowledge of them can the risk to the patient be properly evaluated. The anesthesia is induced by the injection of a cocain derivative into the subarachnoid space, resulting in a toxic effect upon the neural tissue. Generally the reaction is rapidly reversed and recovery is quick and complete. However, occasionally, under some unknown conditions this is not the case and permanent damage ensues. The result is some form of neurologic disturbance. Seven such cases have been studied by Dr. Samuel Brock, et al, of New York (J. A. M. A. 106:441 (Feb 8) '35). A review of them is instructive.

In this series the following conditions were encountered; two instances of aseptic meningitis, one of polioencephalitis, one of lumbar radiculitis, two of cauda equina neuritis and myelitis, and one of transverse myelitis. In six of the seven cases the neurologic disturbance appeared within three days after the anesthesia. In the two cases of aseptic meningitis the onset was almost immediate, while at the other extreme there was an interval of three weeks before the appearance of symptoms in the case of lumbar radiculitis. The anesthetic agent was nupercaine in three cases, procaine with strychnine sulphate in two, procaine hydrochloride in one, and in one it was not known. Common to all is that they are cocaine derivatives. Of interest is the fact that in two cases the neurologic disturbance occurred only after a second spinal anesthesia with the same drug.

The meningitis cases made rapid and complete recovery. One case of cauda equina neuritis and one of transverse myelitis died of complications attributable to the neurologic disease. The remaining three cases made great improvement, but residual symptoms remained.

The etiology is discussed, but no satisfactory explanation is available. The important fact stands out that there is no way of foretelling when these untoward results will ensue.

Editorial Note: The foregoing article is not reviewed with the intention of discrediting spinal anesthesia. In certain types of cases its advantages more than compensate for occasional untoward late sequellae; in these it is often a life saving procedure. However in view of the fact that serious neurologic disturbances may follow, it seems advisable to limit its use to those cases in which it is especially indicated.

EDISTO MEDICAL SOCIETY

The regular meeting of the Edisto Medical Society was held at the Eutaw Hotel Thursday, Jan. 23, 1936, at 2:00 p. m. with the president, Dr. Jas. A. Forte, presiding.

The scientific program consisted of a paper by Dr. Chas. A. Mobley on "Cancer of the Breast."

The following men were elected to office for the new year:

President—Dr. Lawrence P. Thackston.
Vice-Pres.—Dr. T. M. Stuckey
Sec. & Treas.—Dr. H. M Eargle

Delegates to the State Convention:
Bamberg County—Dr. T. M. Stuckey.
Calhoun County—Dr. T. M. Symmes.
Orangeburg County—Dr. L. P. Thackston, Dr. H. M. Eargle.

Every one present agreed to write at least one of his legislators regarding the financial condition of our medical school.

Present were Drs. Mobley, Truluck, Matthews, Nelson, Bolin, Browning, Black, Lowman, Forte, and Eargle.

H. M. Eargle, M.D.,
Sec. Edisto Medical Society.

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

LOCAL QUININE THERAPY IN CASES OF INTERSTITIAL KERATITIS AND OLD CORNEAL OPACITIES

Dr. Elias Selinger

Arch. of Ophthal., May, 1933, and Jan. 1936

Quinine has been used in the Carolinas for years for its anti-malarial properties, but since 1934 Dr. Selinger has reported benefit from its local use in some forms of ocular disease! Therapeutically the action of quinine is bactericide, astringent and also a protoplasmic poison which penetrates deeply into the tissue when applied locally to the mucous membrane. The corneal opacity is a lymphatic and leukocytic infiltration. Since quinine destroys the leukocytes and lymphocytes, especially in and out of the blood vessels there is an especial benefit from its use in corneal opacities. It causes the absorption of abnormal tissue elements, such as newly formed connective tissue in the cornea.

The use of 2 per cent quinine bisulphate ointment twice a day gave rapid subjective improvement after a few days. The patients were able to keep their eyes open.

That the quinine has an effect on the accumulation of lymphocytes and other abnormal cells in the deep layers of the stroma is seen from the fact that the opacities are observed to change in density, and that some of the older infiltrates disappear entirely in places within a few days, while fresh, less dense infiltrates make their appearance from time to time. The rapid change in the character of the infiltrate can be ascribed only to the action of the quinine on the cellular elements making up the infiltrates.

The use of the ointment should be kept up from six months to a year or longer after all activity has ceased, in order to clear up as much of the resulting opacity as possible.

Many opacities had been present for periods varying from six months to five years and longer, and treatment with the quinine ointment was started only after medication with yellow mercuric oxide and ethylmorphine hydrochloride powder and subconjunctival injections of sodium iodide failed to improve the visual acuity or decrease the density of the opacities. One is safe in assuming that marked changes occurring within a comparatively short time may be ascribed to medication, particularly if the changes in the opacities were very slight or absent before medication was begun.

Quinine bisulphate may also be used in superficial punctate keratitis, blepharoconjunctivitis, episcleritis, acute and chronic conjunctivitis. In some of the cases in this last group a 1 per cent or a 2 per cent aqueous solution of quinine bisulphate was prescribed two or three times a day in the place of the ointment.

Opacities due to corneal ulcers are also benefited, but with corneal ulcers there must always be a just appreciation of the underlying pathology. I would imagine that opacities due to leukocytic and lymphocytic infiltration will be much benefited but those due to true scar tissue will be much less improved. But a slight improvement in visual acuity or even improvement of the cosmetic appearance makes it desirable to use any form of treatment that seems free from danger.

Administration: An ointment of quinine bisulphate, 2 per cent or 4 per cent used twice daily. Solution of quinine bisulphate 10 per cent used two or three times a week. Hot applications, atropine, and antisyphilitic treatment must also be used.

The following drugs are among the antagonists and incompatibles of quinine and for that reason should not be used while the patients are being treated with quinine: copper, lead, zinc, mercury, and their compounds, ammonia, alkalis, iodides and bromides and their salts, tannic acid and lime water. Among the synergists are iron, arsenic and mineral acids.

Quinine bisulphate ointment has a favorable influence on the course of interstitial keratitis and promotes clearing of old corneal opacities.

OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., GREENVILLE, S. C.

TRENDS IN OBSTETRICS

Considerable interest is already manifesting it elf in the report of the committee on maternal health which will be made at the annual meeting of the State Association in April. The report will deal specifically with the findings in a study of maternal deaths which occurred in South Carolina during the last fiscal year. The committee will have an exhibit depicting graphically its findings. It has been fortunate in securing funds sufficient to have the full report printed. It is hoped that every doctor in the State who does obstetrics will secure a copy of this report and will study its carefully.

Anticipating this report in some measure, it appears timeworthy to consider briefly some of the trends in the practice of obstetrics. There are those who think that little progress is being made in obstetrics, but this is not the case. Like all knowledge, obstetrical knowledge diffuses slowly through the profession, and strange to say its application is at times the result of popular demand rather than the result of professional initiative and leadership.

The greatest progressive step in the practice of obstetrics in the past twenty-five years is probably the recognition of the value of prenatal care. The practice of giving prenatal care to the seemingly healthy pregnant woman began with obstetrical specialists treating well-to-do patients, and was soon extended to free clinic cases under their supervision. Its value was soon demonstrated in a reduction in the incidence of eclamptic toxemia, advanced nephritis, severe anemias and unrecognized pelvic deformities and cephalo-pelvic disproportions.

Beginning as it did in the care of the sick and the very poor, the practice of giving prenatal care has gradually spread to the general practitioner in his treatment of the great middle economic class. There is hardly a general practitioner who does not offer some type of prenatal care to his patients. This is frequently not adequate, however. The cause of its inadequacy is at least twofold. Many doctors are not thoroughly sold on its value, and so are unwilling to undertake it without adequate remuneration, while they are just as unwilling to charge their patients an adequate fee for it. On the other hand, many patients do not recognize its value, hence do not demand it and are unwilling to pay for it. Both of these factors are rapidly decreasing. Recent medical graduates have been impressed with the value of the care given pregnant women in the hospitals where they interned, and include similar service in their own cases very much as a matter of course. They find that such service tends to increase their reputation and prestige as well as their income. This in itself is an incentive to older doctors to give similar service. The public generally learns faster by word of mouth than from the printed page, and every woman who receives adequate prenatal care is impressed with it and becomes a focus from which radiates knowledge of its benefits. Doctors who do not give such care are losing patients to those who do.

The next most important recent advance in obstetrical practice has been the extension of hospitalization in both normal and abnormal cases. As in prenatal care, this too began with the well-to-do and the charity classes. It has extended rapidly. More and more obstetrical beds are required. This marked increase in hospitalization should have been expected to reduce sharply the mortality and morbidity of delivery, and particularly that from sepsis. Unfortunately this has not proven to be the case. The explanation which has been frequently advanced is that surgical intervention, under a false sense of security given by a hospital delivery room, is more frequently practiced, and has done harm which has more than equalized the difference in safety between home and hospital deliveries. To this is added the risk of exposure to more virulent organisms in a poorly organized department of a general hospital.

Serving to illustrate how prenatal care ties in with hospitalization to the benefit of expectant mothers and to the satisfaction of their physicians is the status with regard to toxemia of late pregnancy. Prenatal care discovers most of these cases in their incipiency. Treatment is begun. If response is not adequate the case is hospitalized, and more intensive treatment is instituted. As a part of this treatment labor may be induced and delivery effected. Rarely does the case reach the convulsive stage, and then in an occasional fulminating type. Accouchement force' is no longer done, and cesarean section under general anesthesia has almost gone into discard. As a result the incidence and the mortality from eclampsia has been greatly reduced.

Relief of pain during labor in a manner safe for both mother and child is something greatly demanded by women, and progress is being made in providing it for them. Neither a universal nor a wholly satisfactory method has been evolved.

Finally a great forward step in obstetrical practice which is just getting started is that of prolonged postnatal observation. The need of this has come to be recognized since obstetrics and gynecology have become united in medical schools, in hospitals and in practice. Prior to this the obstetrician did not follow his cases through after delivery and the gynecologist was able to trace them back to the original cause only in part. Postnatal observation for a period of one year or longer is proving of great value and is being offered and advocated by obstetrical leaders. Simple treatment of minor lacerations and granulations of the cervix after delivery will diminish the incidence of cervical cancer later and will lessen backaches and uncomfortable leukorrheas. Acquired uterine retroversions can usually be cured in the postnatal period by postural exercises and supporting pessaries, and by so doing subinvolutions, menstrual disturbances and sacral backaches are prevented. Renal damage should be followed through and when indicated contraceptive instruction should be given so that dangerous subsequent pregnancies may be avoided, or so that babies may be so spaced as to avoid exhaustion or undue strain. Such a program of observation and treatment can not be finished in six weeks. Even though at the end of that period normal involution and healing promises to occur, examination three months later frequently shows subinvolution, relaxations and erosions, which should be treated.

Not only will South Carolina no longer be ashamed of her maternal mortality, but the general health of its mothers will improve, its infant mortality will decrease and the incidence of cervical cancer will lessen when her physicians fully appreciate the value of these recent trends in obstetrics and incorporate them in their own practices.

COASTAL MEDICAL SOCIETY, AUXILIARY

Mrs. Adolph Ritter was chosen to act as a delegate to the annual state convention of the South Carolina Medical Association and Auxiliary to be held in Greenville in April. Mrs. Carroll Brown of Walterboro was named alternate.

The selection of Mrs. Ritter to represent the Coastal Medical Association Auxiliary occurred at the regular monthly meeting held at the home of the president, Mrs. Riddick Ackerman, in Walterboro last Thursday. After the discussion of various business matters, Mrs. Ritter presented an instructive paper on communicable diseases. Later, dinner was served at the Lafayette Grill.

At a meeting of the Association held on the same day in Walterboro, papers were read by Dr. Joseph Cannon of Charleston and Dr. Carroll Brown.

NERVOUS AND MENTAL DISEASES

E. L. HORGER, M.D., STATE HOSPITAL, COLUMBIA, S. C.

MANIC-DEPRESSIVE PSYCHOSES

The manic-depressive psychoses compose one of the larger groups of mental disorders. According to the United States Bureau of Census for the year 1934, the number of patients in this classification was exceeded by that of only one other group—dementia praecox. At the South Carolina State Hospital, however, first place numerically, among first admissions, goes to the manic-depressives. Of the 3755 patients admitted to this institution during the period from September 1, 1931, through June 30, 1935, 771 were manic-depressive, with 461 dementia praecox.

Manic-depressive psychosis—"the name indicating the principal phases of its manifestation"—consists of the following types: manic, depressive, circular, mixed, and others. Again reviewing South Carolina statistics, we find that in the group of 771 manic-depressives, 464 were of the manic type, 263 of the depressed, and 44 of other types.

The cause of the development of this disorder may be considered from two aspects—first, the predisposing factor, as heredity; second, exciting causes. The latter may include any severe strain or stress acting upon the individual, either physically or mentally, as for example, overwork, fright, disappointment, bereavement, family disturbances, and in some cases physical diseases.

The characteristic symptoms of the manic type are "flights of ideas, psychomotor excitement, and emotional excitement;" of the depressed type, "difficulty in thinking, psychomotor retardation and emotional depression." It is to the depressed type that special attention is directed.

The depression varies in severity. It may be very mild—just a simple retardation, physically and mentally. The patient is slow in his movement, speaks slowly in a low tone of voice —perhaps just a whisper—and often in monosyllables. He sits idly about with folded hands, taking no interest in things. His facial expression may not indicate that he is depressed. If the condition is more severe, the patient is extremely slow in reacting and in his movements, he sits for hours in some corner, and his speech can scarcely be heard. There is great emotional depression, and facial expression is one of profound sadness. He may have delusions which are usually self-accusatory; for example, he may think he is responsible for the sins and wickedness of the world, that he has committed some unpardonable sin, or that he has some incurable disease. Hallucinations may occur. Physically, the appetite is poor, the tongue coated, and there may be loss of weight and constipation. In some cases the extremities become cyanotic. There is also insomnia.

The condition may progress further, the patient become stuporous, remain in bed, refuse to speak of eat, necessitating forced feeding. There is great retardation. Often the facial expression is one of fear and apprehension. Consciousness is clouded and no information can be obtained at this time. Upon recovery, he relates horrible delusions and hallucinations suffered.

In considering this type of mental disorder it is well to remember that all cases of abnormal depression are potentially suicidal. Other cases of depression will resort to alcoholics or drugs to help them in their dilemma. Later some of these will become alcoholic and drug addicts. Still other cases of depression develop some somatic disease such as pellagra, etc., because the mental state of the patient results in his taking insufficient food or in his inability to metabolize the food. The manic-depressives are also more susceptible to the infectious diseases such as tuberculosis.

Thus, the mind and body are closely related —a fact appreciated by all. So closely related are they that what affects one usually affects the other. It is very essential, therefore, that the general practitioner have a thorough knowledge of mental diseases as well as physical in order to care for and treat properly those who place themselves in his charge. Particularly does this apply to the depressed cases. With

both physical and mental pictures at his command he will be more successful then in preventing some suicides and in warding off the development of at least a few alcohol and drug addicts.

SOCIETY REPORTS

COLUMBIA MEDICAL SOCIETY

Resolutions on the Death of Dr. Harmon

Thursday afternoon, December twenty-sixth, the sudden death of Doctor Samuel E. Harmon shocked and saddened his many friends and patients in South Carolina. His end came swiftly and apparently without pain soon after ministering to a patient. This swift, silent ending of a useful, active life at its peak of achievement, was in keeping with Dr. Harmon's expressed desire that he might die in harness.

Born on a Saluda Valley farm, August 24, 1871, the son of Frederick and Elvena Seay Harmon. At the age of two, he was unfortunate in losing his mother. Thus, early in life he was thrown to a great extent upon his own resources. This, coupled with the vigorous out door life of the farm, contributed to his rugged physique which served him well until the very end.

Dr. Harmon's early education began in a country school near his home, in the public schools of Columbia and later in Newberry College. After one year at Newberry he entered the University of Tennessee Medical School where he was graduated in 1899. Immediately after graduation he proceeded to New York and post graduate work. This desire to equip himself thoroughly for his life's work sent him to all the large Clinics in this country during the course of his lifetime.

In 1900 Dr. Harmon began the practice of medicine in Columbia, S. C., where he laid the foundation for a career in general surgery that brought to him the love, respect and confidence of an unusually large circle of friends both professional and lay. His sincerity, keen judgment, his profound sense of duty and his qualities of leadership stimulated his colleagues to honor him many times. He served as President of his County Medical Society, his District Medical Society and for seventeen years on the Council of the South Carolina Medical Association; the latter twelve as Chairman. His last and greatest honor came to him when he was elevated to the Presidency of the South Carolina Medical Association which office he held at the time of his death.

In June 1908, Dr. Harmon was married to Ethel E. Shull of Columbia, S. C. From this union two children were born; Ethel, who died at the age of six months and Samuel Eugene, Jr., who with his mother survive.

Dr. Harmon was many times heard to say, "a good doctor is a blessing to his community—a poor doctor a curse" and knowing Dr. Harmon as the members of this Society knew him, we are assured that in his thirty five years in the active practice of medicine, he earned and richly deserved to be called by us his fellow physicians and surgeons and by his patients; "a good doctor."

Be it resolved that the Columbia Medical Society set aside a page of its minutes as a memorial to our deceased colleague, that a copy of this be printed in our State Medical Association Journal, the local newspapers and that a copy be sent to the family.

F. M. Routh, M.D., Chairman.
Benjamin Rubinowitz, M.D.
Floyd D. Rodgers, M.D.

Adopted by the Columbia Medical Society with a rising vote.

Benj. Rubinowitz, Secretary.

PEDIATRICS

R. M. POLLITZER, M.D., GREENVILLE, S. C.

RICKETS

Rickets is a disease which notwithstanding its very full and frequent discussion, is daily being neglected in private practice. Although marked advances in our knowledge concerning it has been made within the past two decades it is by no means a recently discovered malady. For as long ago as 1650 Francis Glisson wrote an excellent description of this entity.

Rickets is of rather slow and insidious onset. In no way is it dramatic or terrifying as scarlet fever or poliomyelitis. But it does quite often bring about deformity, which may be serious as in females, and secondarily it causes great wastage of life.

As a working definition one might say that it is a chronic disease in which the ration and metabolism of calcium and of phosphorus is so deranged that proper bone formation is impossible. Further the muscular and nervous systems are affected. Also there is in many instances a diminished resistance to infection, especially in the respiratory tract. A complete understanding of the pathogenesis is not to be easily had, for many factors are involved. We do know that diet, vitamin D, sunlight and mineral salts, all play a part. It is firmly established that there is a lack of balance of serum calcium and phosphorus. Often the serum phosphorus is only 1-5 of the normal. However the amount of mineral intake is not nearly so important as its utilization. For even with inadequate diet, cod liver oil and sunlight may prevent rickets. These two agencies regulate the metabolism of calcium and phosphorus. However in actual practice rickets often develops where cod liver oil has been given. For not infrequently too little is administered, or it is given for too short a time. Also some oils on the market are not potent. One would think that in a sub-tropical climate rickets would be rare. However throughout more than half of the year most of the sunlight reaches only the clothes, excepting the face and hands. Further, in cities during much of the time, smoke and dust obstruct it.

Too many of us think of rickets merely as bone deformity, and do not keep in mind the early manifestations. This is similar to getting interested in a hemiplegia, but not noticing arterio-sclerosis. Few people in South Carolina are willing to go to the trouble or spend their money to have the baby seen regularly by a doctor, when in their opinion it is not sick. Unless an infant has fever, or a convulsion, an eruption or keeps its parents awake it is generally considered well.

Therefore it happens too often that, at 4 months, or 5 months, early symptoms of rickets occur. As a rule if noticed they are attributed to disturbances in feeding or merely as being incidental to teething. From my own personal observation over a period of quite a number of years in pediatric practice; I would class head-sweating, loss of appetite, restlessness by day and especially during the night as important and early danger signals.

But after 6 months or even before, positive clear cut evidence appears. The bones clinically and radiologically show changes. Those of the skull are soft and feel squashy. The epiphyses, especially of the wrists are distinctly enlarged. The chest presents osteochondral enlargments, and usually is pushed forward showing very distincly Harrison's grooves on the lateral portions. There is considerable loss of muscle tone and the abdomen protrudes markedly.

By about a year the infant assumes the very characteristic appearance of late rickets, so that in the sitting posture a marked gradual curve of the spine is noted, and the little one seems to be mostly head and abdomen. In fact the prominent square head, by careless observers has been mistaken for hydrocephalus. In addition there is a marked pallor. Many of these youngsters are apparently fat and as a rule they are not underweight. However the tissue turgor is poor and a slight illness causes rapid loss in weight. But even all these abnormalities are frequently not noticed by the parents, and indeed missed by the doctor who has not examined the infant nude.

At 13 or 14 months however when the baby begins to walk, everyone comments on the bowing of the legs or the knock-knees. Or if walking is greatly delayed then perhaps the aid of the doctor is sought. Quite often the orthopedist is the first to whom the baby is brought. In brief it may be said that if doctors and parents would adopt the simple procedure of routine physical examination of infants throughout the first year, in the vast majority of instances rickets could be prevented, or detected early and cured.

GASTRO-ENTEROLOGY AND PROCTOLOGY

BY W. T. BROCKMAN, M.D., GREENVILLE, S. C.

A FEW EXCERPTS FROM 1935 CURRENT LITERATURE

Report of Clement L. Martin to
American Proctologic Society,
Atlantic City, N. J.

Fissure, Papillitis and Pectenosis

Morgan reports 83 cases which he operated, whose lesions could be explained by the presence of pectenosis and a pecten band. He concludes that pectenotomy is the method of choice and advises against the practice of divulsion in dealing with this condition.

The Philadelphia post-graduate group treated four cases of fissure by injection of Gabriel's A.B.A. solution; it proved painful and unsatisfactory in these few cases. 1 cc quinine and urea hydrochloride injections fared little better in three other cases. Using smaller amounts, others have found them quite satisfactory in subacute small fissure. "Three fissures located in the posterior site were excised, after which the technic as outlined by Buie, namely suturing the anal margin to the external sphincter muscle with catgut, was utilized. All three cases were followed by infection, and in one the sutures sloughed off."

N. D. Smith advises delay in incising the abscess until there is definite fluctuation: "incision is indicated as soon as the abscess points or until there is definite superficial fluctuation." Many may not agree with this view. He states that a common practice, that of inserting gauze strip packing is painful and of doubtful value; on this there will be more general agreement.

Murdock saves as much as possible of the external sphincter where the fistulous tract crosses it. "Several years ago I began saving the continuity of considerable sphincter muscle at the site of fistulectomy. A slight amount of freeing of the bowel wall above is done. It is then possible to place the sphincter upward and stitch the rectal wall downward over it fixing the sphincter against solid tissue in a somewhat higher but nevertheless good functioning position. The final result is a more normal anal contour without as much notched defect, this is sometimes marked after the usual operation."

This technic is applicable to about 40 per cent of his cases, in the others the usual fistulectomy is performed.

Allen and Haskell used a two-stage fistulectomy in 119 of 226 cases. This is extending a sometimes necessary procedure beyond what most proctologists will regard as its indication.

In detailing the "Progress in Rectal Surgery" Gordon-Watson emphasizes the following—

The mechanics of the operation for fistula in ano remain about the same as they were in the 14th Century as practised by John Anderne. He believes he has evidence to prove that fistula-in-ano arises in ano-rectal glands which probably represent mucous glands of the primitive cloaca which persist in some adults and communicate with the anal canal.

Much progress has been made in treatment of cancer of the rectum and sigmoid in the last 25 years. He mentions the Miles and Lockhart Mummery operations.

He associates rectal adenomata and cancer very closely. He believes that the sequence: hyperplasia, adenoma cancer, is clear cut and established" on the basis of the work of Dukes. As a cancer progresses any associated adenomata seems to be inhibited.

The mortality following colostomy has been

reduced from 60 per cent in 1869-78 (lumbar) to 9 per cent (on a five year average) at present.

He notes that the explanation of vesico-colic-fistula on a basis of diverticulosis was not made until the present century. Rectosigmodectomy is advocated for prolapse and presacral sympathectomy for megacolon.

Daniels reviews the fundamentals in rectal diagnosis. He requires a simple history covering the matter of tuberculous infection and the use of alcohol. There should be a careful examination including palpation of perianal, anal, and rectal regions, and careful inspection with and without instruments. Every patient should be sigmoidscoped and multiple lesions looked for, especially adenomata and carcinomata. The differential diagnosis of fissure in ano, tuberculous anal ulcer, chancre of anus, and epithelioma of anus is important.

Durst directs attention to the proper use of the proctoscope, noting among other points that digital examination should precede the use of the instrument, that the proctoscope should not be passed without the use of air inflation if possible, that it should not be advanced until the bowel is well seen and the direction of the lumen noted.

Gabriel enumerates the following as the recent advances in the treatment of rectal diseases: low spinal anesthesia, dettol (a new antiseptic), surgical diathermy, sclerosing substances in the treatment of hemorrhoids, and prolapse, anesthetics in oil, recto-sigmoidectomy for prolapse, Frei test in rectal stricture, perineo-abdominal excision for cancer, presacral sympathectomy, intraspinal injection of alcohol for pain, sigmoidscope with proximal light, and diathermy forceps.

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RIDGE MEDICAL AUXILIARY HOLDS MUSICAL TEA

The Ridge Medical Auxiliary held a Musical Tea for the benefit of the Student Loan Fund, Thursday afternoon, March 25. The tea was held at the home of Dr. and Mrs. W. P. Timmerman on Columbia Avenue. Mrs. Timmerman is local chairman of the Student Loan Fund. The entire lower floor of the spacious home was given over to the program. Vases of yellow jasmine, white iris and pink snapdragons artistically arranged added to the attractiveness of the different rooms.

Mesdames W. P. Timmerman, A. L. Ballinger, and E. C. Ridgell welcomed the visitors at the doors. Mrs. F. G. Asbill and Mrs. David Garvin directed the guests to chairs. Miss Frances Asbill, blonde, dressed in yellow frilled organdy, and Miss Nellie Catharine Calclough, brunette, wearing blue net, received the silver offering. About a hundred guests were comfortably seated.

The following program was rendered and greatly enjoyed:

Violin-Rondino, Beethoven-Kreisler; Romance—Wienisnki. Miss Charlotte Ellen Corzine; Miss Elma Frances Corzine, Accompanist.

Voice-Caro Nome-Verdi; Dawn-Hinson. Mrs. Edith Jones Unger, Coloratura Soprano;

Miss Julian Shealey, Accompanist.

Piano-Romance-Sibelins; Waltz in D. Flat-Chopin. Mrs. Marie Monckton Jones.

Reading-Silence Please-Gould. Miss Daisy Pearce Towill.

Voice-Inter Nos-Payden; Coming Home—Willeby. Rev. Maxie Collins, Tenor; Mrs. Grace Carson, Accompanist.

Voice—Clouds—Charles; Pastoral—Carey; Springtime of Love—Moskowski. Mrs. Nellie Carter Corzine, Dramatic Soprano; Mrs. M. M. Jones, Accompanist.

Voice—Sextette—Green Cathedral—Hahn. Mrs. Kathleen Counts Barr, Mrs. Katheryn Keller, Miss Anne C. Rose, Mrs. Louise Sorrell Crosson, Mrs. Eunice Whittle Eubanks, Mrs. Navice Setzler Able; Mrs. Eugenia Sygert, Accompanist.

Voice—What is a Song?—Curven; Pale Moon—Logan. Mrs. Lucy Scurry Timmerman; Miss Ruth Hunt, Accompanist.

Voice—Dream of Home—Ardite. Miss Julia Johnston; Mrs. Eugenia Swygert, Accompanist.

Vocal Duet—Oh! That We Two Were Maying—Smith. Miss Julia Johnston, Mezzo-Soprano; Rev. Walter Burne, Baritone.

At the close of the program guests were invited into the dining room. Mesdames Caldwell, Cullum, and A. C. Jones were seated at the dining table (on which was spread an elegant real lace cover) pouring tea. Mesdames St. C. Asbill, H. K. Dickert, and Mach Duncan served in the dining room. Delicious sandwiches, cookies and spiced tea were served. The tea was considered a success in every respect.

Mrs. E. C. Ridgell,
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THE SANATORIUM is a private institution with 150 beds, located in the Ginter park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

THE PLANT consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded 50-acre lawn, surrounded by a 120-acre tract of land. Remoteness from any neighbor assures absolute quietness.

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THE BUILDINGS are lighted by electricity, heated by hot water, and are well equipped with baths.

THE SCOPE of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Five physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

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Illustrated Booklet on Request

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THE RELATIONSHIP OF THE CLINICAL PATHOLOGIST TO THE MEDICAL PROFESSION AT LARGE

By

J. M. FEDER, M.D.

Pathologist, Anderson County Hospital,

Anderson, S. C.

We choose to open this discussion with an interpretation—a definition if you please, wherein we will attempt to define that often ambiguous term,—Clinical Pathologist. Our understanding is: A Physician who supervises, performs and correlates various diagnostic procedures requiring specialized skill and instruments of precision, translating the results into terms of Clinical Medicine.

It will be noted that I use the word translate and I use it advisedly. Were I to say to you that one translates from English to Spanish, then the conclusion would be immediately reached that the latter language was spoken with the same fluence as the former. The same must be of necessity apply when an attempt is made to translate from the terms of the test tube to the terms of the bedside. Happily, the vast majority of the Clinical Pathologists come into their specialty from the ranks of the General Practitioners of Medicine. Hence, no foreign language need be learned and this translation process requires no linguistic metamorphosis.

Closely associated with the Clinical Pathologist is a corps of trained workers, Laboratory Technicians or Medical Technologists, the terminology differing Geographically. These admirable and highly useful people perform all of the technical duties evolving about the Laboratory and report their findings to their Director. Their own code of ethics, and they have a most rigid one, prohibits any attempt at interpreting results or in any manner crossing the boundary into Diagnostic Medicine. This rule, I am happy to state, is but seldom broken and then usually only under the insistance of some thoughtless member of the Profession, urging them to render an opinion that they are by no manner or means professionally competent to express.

In regard to the History of this specialty, which is not ancient, we find that it is almost as American as the Fourth of July for nowhere, except in our Northern Sister, Canada, do we find an individual analogous to the Clinical Pathologist as we know him. To all of us who have been abroad the "Autopsy Surgeon" of the Old Century is no novelty and the great corps of able Pathologists of the teaching centers of Europe are too well known to require comment; but, the position filled by the Clinical Pathologist in America, especially in the smaller centers, is distinctively unique without parallel on earth. To revert back to interpretations, another of mine and perhaps most apt is,—A General Practitioner who by choice limits his activities to Laboratory and other referred Diagnostic work.

At the turn of the Century, very little headway was being made in teaching the relatively new Science of Bacteriology in American Medical Schools. Mostly gross Pathology was emphasized and it in connection with other subjects, Surgery or Physiology. Step by step progress was made but as a Nation, we were not very Clinical Pathologically minded. Then came the War. Physicians fell under the influence of the Medical Departments of the

Army and Navy, always leaders in Laboratory Medicine. Some of these fledgeling Medical Officers served with Departments of Pathology and were thus trained in the specialty, others were intimately associated with it,—all came under its spell. The War over, they returned home, enthusiastic over this newer Medicine, this Laboratory controlled Medicine and they came to demand a service of this nature from their local institutions, similar to that they had known while in uniform—and the response was not lacking. Then and there the lusty infant, Clinical Pathology, was born. So the cry went out for Laboratories, more Laboratories. Trained personnel to man them was scant; so scant that in 1924-25, the peak was reached, given impetus by the requirement of the American College of Surgeons that all tissue removed at operation be examined by a Pathologist. So depleted was our personnel that only one man was available to fill each five demands made upon our never too well filled ranks.

It is not infrequent that the clinician fails to avail himself fully of the counsel of the Laboratory Specialist through misunderstanding of his capacity or willingness to cooperate in solving the problems confronting the Doctor. Many times, on the other hand, the problem is not placed before the Pathologist in the most assimilable manner and often golden opportunities to obtain his fullest aid are heedlessly passed. Take the subject of biopsies. Were the Pathologist permitted to see the lesion in relationship to other structures before its removal, very frequently a much more intelligent interpretation could be given by him in his report. However, in place of this happy state of affairs, how often is a bloody, nondescript, millimeter sized bit of tissue handed the Laboratory man with a request for a diagnosis and often even a prognosis—minus even the slightest history of the case.

Though we, as Clinical Pathologists, believe in ourselves and our work as much as it is possible for any corps of men to do, and while no question enters our mind concerning the value of the Clinical Laboratory in diagnostic Medicine and as a therapeutic check, none regrets more than we the feeling of infallibility sometimes placed upon the Laboratory report. May I again remind you that our attitude has, is, and will always be that the Clinical Laboratory is but one of the avenues of approach to the diagnostic problem and, is not, the ultimate end of the diagnostic journey.

More to be regretted, perhaps, is the attitude of many that the often never read preoperative blood count and urinalysis is the ultima-thule of Laboratory Medicine. Let us assume that this same patient shows a sharp rise of fever a few days post-operative. How can you help us then, inquires the Surgeon. Well, a sudden, marked indicanuria might tell the Pathologist that there is a good possibility of beginning peritonitis. A sudden disappearance of the Chlorides from the urine might well pressage beginning Pneumonia and on the other hand, a carefully examined blood film may paint an easier picture in the terms of malarial parasites. In tropical and subtropical countries, this alarming but relatively harmless phenomena is frequently experienced when a relatively latent malaria is inactivated by a perhaps mild surgical procedure. Again, another little thought of fact is the use of the Friedman test in the differentiation of Teratoma of the testicle from other tumors of that region. Yes,—we sometimes find a positive Friedman test in the male and when this tumor is removed, the test becomes negative. If it does not, look out for metastasis. These few simple illustrations are given to merely demonstrate several of the many, not commonly known ways in which your Laboratory can serve you towards a solution of your own problems, let your field of practice be what it may. In these things your Pathologist stands ready always to bring to bear all of the equipment at his command, to aid and cooperate, in harmony and understanding with you, as individuals and collectively, in any and all of your professional undertakings.

So the future of medicine lies in the trinity, Surgeon, Internist, Pathologist, symbolic of all physicians, working hand in hand, with mutual respect and understanding, each for the problems of the other. Failing in this, we overlook the greatest reward of work well done,—and of yet greater importance, the patient's welfare.

PRESIDENT'S ADDRESS

By
ROBERT C. BRUCE, M.D.,
Greenville, S. C.

In taking up the duties as president of the South Carolina Medical Association early this year, it was my sincere wish to develop Dr. Harmon's plans and ideas as best I could, but it has been most difficult. Many of his plans were of such a nature that his interpretation could be the only correct one, others which have changed in their vital aspects from day to day. The entire socio-economic scene is moving with such rapidity that the problem of yesterday has, in many cases, become the last and shallowest mark on the problem of today. I am satisfied, though, that Dr. Harmon recognized this contingency and went below the surface to evaluate the fundamental issues the association has to meet.

As with all people, the involved principles of our economic security are of paramount importance. The problem of the individual doctor who is without private means, struggling with a sort of desperate defeat to obtain a decent living, undermines the very integrity of our work. It produces our dope peddlers, our criminal abortionists, our fee splitters, and a tremendous deterioration in the doctor's ability to function as a physician. The reason is there, but in many cases the responsibility is ours. Professional skill has become a marketable product and can be bought—and sold—at bargain prices on a commodity basis. There are times when it is peddled out in broken doses; other times when it is sold in doses of heroic proportions. There are many instances where commissions are paid to individuals who secure trade. Yet perhaps worst of all is the underbidding that presents us with the doctor who cuts the throat of his colleague for a price—all of which is founded on the chicanery of a commercial racket. It is useless to pretend that the medical profession can survive on these resemblances to commodity distribution, useless to pretend that the individual doctor or the profession can be anything more than the fearful result of such practices.

Yet the doctors who have developed these vicious attitudes toward medical ethics have strong support. The lay economists agree with the ideas and have consigned ethics to the waste basket. They insist that medical incomes should follow, like commodity prices, "a law of wages." But what the law of wages may be or how it may be applied to the last individualized service, I do not know. Although I do gather that a doctor may be allowed to measure the extent of his income by calculating the amount he would earn if he were to give up his profession and hire himself out as a wage earner. If such were the case the worst doctor would probably be the best wage earner, the best one a dollar-a-day laborer. As to this particular theory, the Bureau of Medical Economics says, "The assumption . . . is that the price of professional service is fixed . . . in much the same way as that of commodities . . . The relations surrounding medical service have changed little for hundreds of years. They have been the same . . . in all countries, at all times. Practically all theories in connection with production have been developed to explain an industrial system which is less than two centuries old and in which many of the features on which they are based are but little older than people now living. Medical economics seeks to explain relations almost as old as man himself."(1)

Which has the better right to consideration, the economics of commodity production which may be a temporary or definitely unsound phenomenon; or professional relations which have persisted by the very force of its standards throughout the centuries? Personally, I do not think the force of age or tradition is always a test of value. Senile prejudices in favor of ourselves have accumulated and must be eliminated, yet proven values, such as a decent responsibility toward our colleagues, must be adhered to in spite of their age. At all times, the profession's attitude toward the patient has been so completely divorced from commercial practice that it seems impossible that we should now be on the verge of creating a system which is based on the theory of commerce. From the moment he enters the practice of medicine until the moment he dies, the doctor's obligation to his patient admits of no

Presented before the South Carolina Medical Association, Greenville, S. C., April 22, 1934.

commercial bargaining yet bargaining is the root, trunk, and branch of industry.

Our situation seems to be the perfect paradox. But what to do? Without recourse to chicanery or commercial practice, how shall the doctor's income be established so that he shall be able to obtain a livelihood while he upholds, at the same time, the integrity of his profession? There is certainly no immediate answer and equally certain that we must make some attempt to untangle the problem. Students of medical economics are of the opinion that the county medical society is the unit from which the effort must start. But it is my firm belief that the first step in developing any effective plan begins with the individual doctor. He is the real unit. Any effort which may be of benefit to him or to the profession lies in his hands. His cooperation or non-cooperation, his honesty or dishonesty determines every other man's success or failure. Here history is repeating itself, for once again the life of the profession is dependent on him. But he can have no enmity, no personal axe to grind, no hard and fast fule for or against p e r s o n a l friends, because one inflexible will to dominate has the power to force on other inflexible wills a compromise which will be impossible to modify later on. It is important to remember that every agitation among ourselves weakens the prospect of adjustment. The public reflects, exaggerates, and profits by our personal animosities—and we are not strong enough to survive it.

It's none too pleasant to stand off and examine ourselves closely. Nor is it flattering to examine the attitude of the general public toward the profession. Whatever the geographic distribution, whatever the economic status, or even the cultural background, the laity's understanding of medicine and its ethics is a strange compound of folklore, of sensationalism which they demand and get from the lay press, and downright ignorance. In recognizing such attitudes, though, we cannot absolve ourselves from blame. Far be it from me to say that I know what should be done. I only know that few doctors have the time or means to become educators; that every man's work must oe done; that his patients must be relieved. I know that each one of us prescribes a bromide for poverty and hopelessness and its attendant ills; that we treat instability which comes from the economic fear of illness with medicines; that we can do little for the shiftlessness and irresponsibility which is produced by a heritage of pellagra, hookworm, and malaria. And as to our own economic insecurity, I know that every man aids and abets all in perpetuating the creditor habits of our profession. So the first step in the remedy cannot be effective until it proceeds from the individual doctor toward the group.

Every one of us must consider, quite honestly and in all humility, his particular responsibility to the problem and make it along with his colleague an integral part of the problem of the county medical society. "The county society is the only geographical unit which includes in its membership the physicians who are practicing all forms of medicine and treating persons of all classes in the community."(2) Each man's experience is a part of the experience of all other doctors who belong to his society. In his own locality, each man can discuss, plan, and establish suitable guides without the fear of imposition of foreign regulations which confuse and obstruct so many local problems. If the individual fails, the group fails. If the small group fails, the larger falls with it, and when, and if, that happens, the entire medical profession will have nothing more to look to than the layman's dictatorship. And if we are determined to create inflexible rules instead of flexible guides, we can look to the state and take what it gives us—which we are already doing to a large extent. Are we as individuals, as members of state and county societies going to make our plans and then ask the co-operation of the state; or, are we going to permit the state to make the laws and draft our services?

In answering that question it might be well for us to remember that our services have been more or less drafted by the Compensation Act. It is not my intention to enter into any full discussion of this act nor of the factors which led to its passage but I should like to emphasize the fact that it has come to stay and more of a like character are going to follow.

The committee which Dr. Harmon appointed to meet with the Compensation Commission to assist in establishing a proper basis for a fee bill was the only contact the medical profession had with the direction of a problem that concerns it vitally. This certainly suggests a preface to bigger issues. It brings us to other unwilling admissions about ourselves. Is there a man among us who can afford to advocate publicly the remedying of the abuses he sees when his bread and meat actually depend on the institutions involved? How many of us can take sides against the free clinics which are practicing curative and preventive medicine—even though the personnel is not licensed to practice? Which one will say to the poor who attend the clinics that the burden of his mental pauperization is destroying the race as a whole? Is there a doctor among us who can more than whisper to himself that the activities of Boards of Health in the competitive practice with the doctor are anything more than the Boards compensation for failure in its legitimate and important duties? Every man among us is balanced on a tight rope and knows it.

Perhaps the thought of a strong organization and a desire for developing in it a cohesive, continuous interest in the political aspects of the situation will do much toward enabling the doctor to exercise his inalienable right of free speech, will give him the right to advocate principles which are not popular. The idea of an organization which has political significance and strength may be displeasing to all those who have prided themselves on the fact that medicine is aloof from politics but we have reached a point now where our pride must keep us only from demagoguery. We must recognize that politics has and always will control our destiny. It is significant to note that the bill for the sterilization of mental defectives which the profession has been advocating for years was passed only on the insistence of a group that was politically important—the Federation of Women's Clubs.

There is no man, woman, or child in the state of South Carolina whose effectiveness is not vitally dependent in one way or another on what we can and do give them, and conversely, ours is dependent on them. Our professional ethics and personal integrity forbid that we give them any but our best, yet, generally speaking, they are reciprocating by providing the means for our death by slow strangulation. However, I am sure that there is no conscious malice in it—nor even a conscious negligence. It is rather that we, as a group, have never made ourselves felt. We are politically unimportant. As a question to emphasize the point I should like to ask: In the event of the death of a prominent member of any organization in the state, let us say the commander of the American Legion, would it be possible that the notice would not be considered of enough general interest to reach the front pages of every newspaper in South Carolina? To go farther afield, would it be possible or even probable that the widow of a general, however unheroic, would receive a government pension of only fifty dollars a month such as Mrs. Goldberger is now receiving? Although it may be rightly pointed out that our ethics forbids the publicity of its affairs, I say that it does not forbid concern with the most ancient and powerful of all ethics—self-preservation. It seems that the time has come when we must enter politics in cooperation,—or competition, if you will—with many another and less justifiable cause. Yet in assuming such a role, we must expect many false steps, and regardless of the sincerity of the majority, we must know beforehand that many members of the profession will always use political power for private machinations. But that is demagoguery, a malignant pathology, with which we can have no commerce.

Certainly we have a legitimate and entirely ethical work to begin on. The medical college is in need of our concerted action. Since it can have no existence without financial aid, its fate is necessarily in the hands of the legislature. But the real responsibility towards its future is ours. It is notable that the Federation of Women's Clubs at its annual meeting in Anderson last week felt the necessity of endorsing a program for the maintianance of the institution as a class A college, notable too that *we* have not made the assurance of its proper financial support a personal cause. How many of us have kept our legislators informed

and reinformed concerning its needs? If we make the business of the institution our business, we have the obvious benefits it can and will give to us. We have in it the answer to the average doctor's urgent need and desire for continuous graduate education. Without too great a strain on our incomes, we could find in it a solution to Dr. Harmon's very strong wish that all doctors should pass periodic examinations in the major subjects of medicine and surgery. But, like the Federation of Women's Clubs, we can dissipate any allusions the public may have that the maintianance of the institution is confined to the narrow calculation of personal advantage to the profession. The institution is an integral part of the state and as such its most important function is the benefit to the state at large.

But the ethics of such a straightforward policy brings us to more dangerous hazards in policies concerning the changing social scheme. Even our worst enemies can hardly deny that organized medicine laid the foundations for many forms of social change. It was at their insistence that the public health service was established; that the care of the needy and indigent, the crippled, the blind, the insane, and the tubercular and maternal welfare was brought to the attention of the state. Now in its over anxiety to do something quickly, the state seems to have forgotten it. Both the law-makers and the laity appear to be wholly ignorant of the fact that many of their proposed changes will work untold hardships on the profession, not only as to our economic situation but in the character of the professional service we will be able to render. Our situation is similar to the inventor who is forced to sell his invention to an individual who has the power to exploit it. In the analysis of the proposed bill sponsored by the Association for Social Security, the Bureau of Medical Economics presents us with an all time record for such vicious practice. If its interpretation is correct—and of that I have no doubt—this bill has a strong resemblance to Hitler's expulsion of the Jews. I should like to present some of the high lights:

The benefits of the voluntary and compulsory plans go to 95 per cent of the total population and the farm laborer, along with the medical profession, seems to be the excluded 5 per cent. "The administration is vested in an insurance commission, a majority of whose members may be laymen, and the chief administrative officer, the Commissioner of Health Insurance, need not be a physician. There is an intricate system of subordinate districts and local commissions and councils with officials for district and local supervision, advisory, and administrative and no limit is set on the amounts to be spent on administration.

"The organized medical and dental professions have nowhere any representation, supervision, control, or consideration, and some provisions seem definitely designed to disrupt and destroy such professional associations."(3)

The revised bill gives "the commission power to remove any doctor or dentist, hospital or other person or agency . . . when in its opinion the inclusion of such a person or agency may be prejudicial to the adequate, proper or efficient furnishing of medical benefits." . . . "And its determination arrived at after hearing on notice of all parties affected shall be final on all questions of law." (Sec. 8, par. 8b)

The local medical manager has the power "to manage and pass on the notices and proofs of sickness, injury, and disability; to determine the furnishing of medical benefits; to pass upon and determine complaints with respect to medical benefits; to supervise and examine into service rendered by all persons and agencies furnishing medical benefits."(4)

Then, too, (Sec. 8, par. 3) he "shall in accordance with the rules and procedures established by the commission promptly determine the validity and the amount of such benefits payable and the validity for medical benefits and the kind and extent of such benefits due."(5)

Were the whole not so serious it would be amusing. Can it be possible that a changing social view point has produced such human vanity? Is it possible that the sponsors of this bill think by bestowing on a Civil Service appointee the power of administration, as "a superforeman of the medical profession" they can also bestow the power of preventing, diagnosing, treating, and controlling disease? By

what intuitive, supernatural method is it possible for one man to learn, through a Civil Service examination, all that a doctor would lay down his life to learn? We wonder if the administrators will suddenly and by virtue of a political alliance take precedence over such men as Reed, Noguchi, Goldberger and thousands of other of less fame but patterned in the same mold. It seems that we have come on another manifestation of the age-old delusions of grandeur resulting from the lesions of a new social disease.

In comparision to this proposed act, other insurance schemes seem flawless—even though the necessity of the insurance seems to have been created in the main for protection against those who advocate the insurance. "The advocates of insurance legislation have stated their objectives definitely or by implication as the desire to keep low income classes satisfied. Bismarck stated this purpose frankly. Lloyd George was a little more subtle, but few would deny that it was the rising strength of the Labor Party and its demand for higher wages led him suddenly to advance his proposal for sickness insurance. This attitude is so general that it is common in Europe to refer to sickness and other forms of social insurance as 'revolution insurance.'"(6)

Within the last few years the auxiliary services—hospital, clinics, and laboratories—have steadily demanded that an insurance system be introduced into their own plans for medical service. "It is not necessarily any reflection on these persons to say that since their duties —and functions are . . . connected with financial management of organizations formed on a commercial model, they are naturally prompted to guard these financial interests. It is unfortunate in their concern with the financial side they seem to forget that their fundamental purpose is to provide the best possible conditions for the giving of medical services by the physician to the sick or injured patients."(7)

During the last twenty years we have had an extensive use of some form or other of health insurance. From the first it has been assumed "that medical service obeyed the laws of commodity economics and that it should be bought in the cheapest market and directed by laymen in the same way that labor power and commodities are bought and utilized in factories."(8) Every day we hear of instances which confirm this attitude. And the doctor is further confirming it with under-bidding and the complete selling out of his colleagues. The advocates point with pride to their accomplishments. They tell us that the "mutual rights of workers and employers and physicians have been safe guarded."(9)

It is not necessary to go into details of the evidence to the contrary nor of those specific cases where the high integrity of the individual doctor employed under the system has kept the insurance from becoming a degrading parody on medical and social ethics.

What can we do about it? Nothing more than by a concerted group action attempt by moral suasion and political strength to restore a professional standard. Also, we can ask ourselves some very pertinent questions. What are the proposed systems and the systems already in existence going to do to you as a doctor? What will be your standards when under the control of a lay commissioner you can give only such service as your "boss" thinks necessary? And most important of all, what of the patient who has insured himself or thinks he has against such treatment?

The very complexities of our relation to politics, government, and public welfare and theirs to us makes it imperative that our organizations become strongly integrated. And that does not mean that they should develop a will to dominate, nor a desire to strangle any other organization or any part of an organization. Our profession's existence is only justifiable when in active pursuit of its aims and ideals. It must feel and understand the reaction of public opinion. It must protect and defend without being at enmity with the public or among ourselves. It must profit by experience, by advice, by adverse criticism, by hostility even, and certainly by the sane facing of the reality of its problems.

And as a last word it might be said that in so far as the future is concerned our association cannot afford to make many mistakes. It cannot leave to the laity the privilege of determining its policies and procedures. In defend-

ing, one man can do little, many can do much. In preventing, we can profit by the French statesman's remark as he went to the guillotine, "Our indifference brought us here."

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MEMORIAL ADDRESS DR. SAMUEL E. HARMON

By

F. M. ROUTH, M.D.,
Columbia, S. C.

On Thursday afternoon, December 26th, 1935, an All Wise Providence removed from our midst Doctor Samuel E. Harmon, President of the South Carolina Medical Association. He passed quietly and painlessly soon after ministering to a patient. This was as he had often expresed the desire that his end would come.

In the Saluda River Valley on a farm now covered by Lake Murray Dr. Harmon was born August 24th., 1871. He was the son of Frederick and Elvena Seay Harmon. At two years of age he had the misfortune to lose his mother and his childhood days were passed at the home of his maternal grandmother in Lexington County. The hardships of the farm in those days probably contributed largely to the development of a rugged physique that enabled him to carry on actively until the end. His early education begun in the country school near his home was continued in the public schools of Columbia. He spent one year at Newberry College and then entered the University of Tennessee Medical College where he was graduated in 1899. Immediately after graduation he went to New York for post graduate work. One year was thus spent at the New York City Post Graduate Hospital.

In the spring of 1900 he began the practice of medicine in Columbia, S. C., and for twelve years did general practice. During this period of practice and throughout his useful career Dr. Harmon many times visited the larger clinics of this country to better equip himself for honest service to mankind. His greatest desire was to be called a good Doctor, and an unusually large circle of friends, both professional and laymen know how well he succeeded in his life's ambition. In 1912 his work was limited to General Surgery and in this specialty he rendered conspicuous and faithful service to an unusually large clientele. He was Surgeon for the Seaboard Railway in Columbia for about twenty-five years and Senior Local Surgeon for about fifteen years. In 1922 he served as President of the Seaboard Railway Surgeons Association. His capacity for friendship was unlimited and his intimate friends numbered many who were much younger than himself. To these he was counselor, adviser and friend. His friends were real ones because he would not tolerate pretending ones. His brusque manner was often a cloak to cover deep feelings and anguish over his inability to save human life and prevent suffering.

His interest in organized medicine was keen. He was a member of the Columbia Medical Society, the South Carolina Medical Association, the Tri-State Medical Association, the Southern Medical Association, a Fellow of the American Medical Association and a Fellow of the American College of Surgeons. His interest coupled with his honesty, courage, sincerity and qualities of leadership gave him many positions of honor and trust. He served as President of his County Medical Society and his District Medical Society. In 1918 the State Medical Association elected Dr. Harmon councilor from his district and in 1923 he was made Chairman of that body. To this position he rendered constructive and distinguished service which equipped him well for his greatest honor, that of President of his State Medical Association. In 1934 he was

Read before the South Carolina Medical Association at Greenville, May 22, 1936.

made President-Elect and succeeded to the Presidency upon the death of Dr. William Egleston in March 1935. To this office he gave his best and until the last was conscientiously striving to better medical conditions and working for the interest of both the public and his profession. Aside from his interests in medicine Dr. Harmon was a member of Ebenezer Lutheran Church, the Exchange Club of Columbia, and was active in the Masonic Order being affiliated with Acacia Lodge, Ancient Free Masons, and also with all higher bodies of the York rite, including Columbia Commandery, No. 2 Knights Templar. He was also a member of Omar Temple, Ancient Arabic Order, Nobles of the Mystic Shrine.

In June 1908 Dr. Harmon was married to Miss Ethel M. Shull of Columbia. Of this union two children were born; Ethel, who died at the age of six months, and Samuel Eugene, Jr., who, with his mother, survives.

He left a large clientele of many who were unable to compensate him for his services, but was never heard to murmur or complain of this as being a burden, and was thoroughly satisfied with the gratitude he earned from these patients. Many of them mourn his passing as acutely as his professional friends do.

When Dr. Harmon had a duty to perform he did it promptly. As an example; his presidential address for this meeting had been completed.

TUBERCULOSIS CLINICS

Dr. G. T. Tyler of Greenville, Chairman of the Committee, authorizes preliminary information in regard to the Tuberculosis Clinics to be held this summer for the purpose of post graduate instruction, diagnosis and treatment of Tuberculosis.

The first one will be held at the Greenville County Tuberculosis Sanatorium, June 17, 1936. The Conferences will begin at 10:00 A. M. Lunch will be served.

The program will be in the form of a Round Table discussion of the various problems confronting the general practitioners, diagnosis, treatment and control of tuberculosis. This will include demonstrations of patients, X-ray pictures, and the method of giving and interpreting the tuberculin test.

The purpose of this is to assist the general practitioners, and it is hoped that all present will present their problems.

Dr. P. P. McCain, Superintendent and Medical Director of North Carolina State Sanatorium will be the guest and leader of the discussion.

All physicians of this District are cordially invited to attend, as well as physicians in other parts of the State. An instructive and pleasant day is promised.

Other clinical conferences will be held as follows: Pine Haven Sanatorium, June 17, 1936, conducted by Dr. Atmar Smith of Charleston; State Park, July 8, 1936, conducted by Dr. Ernest Cooper of the South Carolina Sanatorium, State Park.

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MAY, 1936

GREENVILLE MEETING A MARKED SUCCESS

The eighty eighth annual meeting at Greenville came very near being a record breaker for attendance which numbered around five hundred including the visitors.

The Minutes of the House of Delegates and the President's address appear in this issue.

The practical observation as to the results from the meeting lead along several by-ways. The reports of the officers showed progress along most lines of endeavor untaken by the Association. There were several notable committee reports. One of these was by the Committee on Maternal Welfare, Dr. R. E. Seibels of Columbia, Chairman. This report covered an investigation of maternal mortality and morbidity extending over a period of many months. It is said to be the fifth of its kind undertaken in the United States and discloses that South Carolina has the unenviable record of having the third highest maternal mortality rate in this country. The report has been printed and was distributed to every member of the House of Delegates. It is not too much to say that this is an epoch making contribution in the history of our State. It is urged that every physician in South Carolina procure a copy and join in the campaign to remove this blot from the fair name of our State.

Several amendments to the Constitution and By-laws were proposed to be acted on a year hence. One of these looks toward an increase in dues by 1938. A survey of the dues in every State in the Union by the Secretary reveals the fact that three fourths of the States have higher dues than South Carolina, our own standing the same as they were eighty eight years ago, namely, five dollars. In this connection President Bruce sounded the key note in his address urging greater activity on the part of the State Medical Association members in interpretating to the public the relationship of modern medicine to a modern public. To do this most states have found it necessary to increase their office personnel in order that more wide spread contacts may be made. One of these channels will be through a Committee on Public Relations, as recommended by President Bruce.

The report of the Secretary showed that there are still some small County Medical Societies not functioning at all. This has been a problem since the re-organization in 1905. The members of the Council have all made strenuous efforts to promote a County Medical Society in every County in the State. The problem needs the concerted action of the entire profession. Never before has there been in fact so many reasons why every eligible

doctor in the United States should be a member of organized medicine. This is just as urgent a matter in the remote sections of the State as in the larger centers for a chain is no stronger than its weakest link. There are still two or three hundred doctors in South Carolina who do not keep in continuous touch with organized medicine by the payment of their dues from year to year. We should have not less than one thousand members out of the total number of physicians numbering some thirteen hundred.

The Woman's Auxiliary had a splendid meeting and they are doing mighty good work. They deserve the cooperation and encouragement of every member of the Association. This organization now helps one or more medical students to secure an education each year. The Woman's Auxiliary is also the only organization we know of in this State working continuously toward the compilation of biographical records of the outstanding physicians of South Carolina. This compilation includes about one hundred at the present time and plans are being made for publication of same in book form. County Medical Societies should turn over to the Auxiliary historical data of this kind.

The Scientific part of the program in Greenville measured up to expectation and held the attendance up to a good average throughout. The distinguished guests, Drs. Crile and Porter added tremendously to the occasion.

The Association banquet with honorable Nevile Bennett and Dr. George W. Crile as chief speakers was a great occasion.

The election of officers showed a strong tendency to reelect every one for another term of service. This is a great tribute to the high class of service rendered by these men to the Association. The election of Dr. Julius H. Taylor of Columbia as President-Elect was an honor bestowed upon one whose popularity extends from the mountains to the sea and whose attainments are known far beyond the borders of his native state. Columbia was selected as the next place of meeting.

The success of the Greenville meeting in all of its phases was due to the wise selection of committees on the part of the Greenville County Medical Society and the concerted action to the one end that nothing should be left undone for the comfort and enjoyment of every one who attended the convention.

The Mayor of the City also very clearly indicated in his welcome address that the entire city was interested in making the doctors and their wives feel at home.

There is a growing educational factor at every meeting now worthy of mention, in the scientific exhibits and the commercial exhibits.

JULIUS HEYWARD TAYLOR, M. D., PRESIDENT ELECT

The elevation of Dr. Taylor to the high office of President Elect strikes a popular chord in the hearts of the medical profession of South Carolina as well as a multitude of other friends throughout the State. Dr. Taylor has shown a continuing interest in the affairs of the State Medical Association from his earliest connection with it. He has been well known as an outstanding historian of the Association. He was a staunch supporter of the idea of erecting a memorial to Marion Sims. Dr. Taylor has contributed many papers of scientific interest at the annual meetings of the Association.

He was born in Columbia, South Carolina, August 8, 1878, the son of Benjamin Walter Taylor, M.D., of Columbia, and Marianna Heyward Taylor (Beaufort, S. C.). He attended the private schools of Columbia and was at the University School in Charlottesville, Virginia 1890 to 1893. He graduated from the Citadel in the class of 1896. He then spent two years at the University of South Carolina, 1896 to 98, as the first special pre-medical student of the institution. In 1901 he graduated from the Medical Department of the University of Virginia. Following his graduation, from 1901 to 1905 he served as interne on the staff of the New York Orthopedic Hospital—New York Lying-in-Hospital—St. Luke's Hospital (pathological and surgical services) New York. Since January 1905 he has been engaged in the practice of general surgery, Columbia, S. C.

He is a member of many scientific organizations, including the American Medical Association, the American College of Surgeons, the Southern Surgical Association (Resigned Dec. 1935), the Columbia Medical Society, and the South Carolina Medical Association. Dr. Taylor is a ripe scholar and by his genial personality will lend a peculiar charm to his duties as President Elect of the Association.

PRESIDENT R. C. BRUCE INSTALLED

At the time of the election of Dr. Bruce of Greenville to be President Elect the Journal carried a sketch of his life and activities. On the death of Dr. S. E. Harmon, December 26, 1935, President of the Association at that time the Council authorized the President Elect to assume the office of President. Dr. Bruce at once took up these duties and endeavored as far as practicable to carry out the plans of the deceased President. At the Greenville meeting, April 21, 1936, Dr. Bruce was formally installed as President of the South Carolina Medical Association and his Presidential address appears elsewhere in this issue. We urge every member of the Association to read this address for it embodies many of the problems the profession is meeting at the present time and will face in the near future. As is brought out in the address these problems are not to be solved by any one individual but by collective action on the part of the entire profession. Our new President has had an enviable all around experience in the practice of medicine as a general practitioner. He has had desirable contacts with public health problems so urgent at the present time. He has given deep study to economic problems and withal is splendidly equipped to be the real head of the profession in South Carolina during his term of office.

NOTES ON THE A. M. A. AT KANSAS CITY

It will take some months to evaluate the results of the meeting of the American Medical Association in 1936. The place of meeting had many admirable features. It was geographically strategic and as a result the attendance approached ten thousand. Climatic conditions were ideal. The new auditorium, one of the largest and most complete in the United States met every expectation. We of course are always concerned about the relationship of our own constitutent State Association to the national body. This year South Carolina was unusually prominent in the proceedings at Kansas City. On account of the serious illness of the President Elect, Dr. J. Tate Mason of Seattle, who could not be present Dr. Kenneth M. Lynch, Vice President of the Association, participated in the opening general meeting and read the address of the President Elect who was installed in absentia. One of the splendid features of the A.M.A. is that of the scientific session held before the general meeting at which many distinguished visitors are presented. Dr. Lynch presided over these meetings also and introduced among others Lord Horder, Physician in Ordinary to King Edward VIII, of England, and Professor Leon Asher of the University of Berne, Switzerland. The delegation from the South Carolina Medical Association was honored by appointments on two very important committees, one, the Reference Committee on Reports of Officers and the other the Press Committee whose function it was to interpret the deliberations of the Executive Session to the newspapers.

Dr. William Weston of Columbia was a delegate for the first time in the House of Delegates representing the Pediatric Section of the American Medical Association. Dr. Weston was chosen to nominate one of the four candidates for President Elect of the American Medical Association. The entire scientific aspects of the meeting were of the highest order. The scientific exhibits have now become of extraordinary importance as an educational factor in world medicine. Here come the latest achievements in medicine and they are presented for the most part by their originators. Many prizes are given for worthwhile contributions. The Gold Medal was awarded to Charles B. Huggins, W. J. Noonan and B. H. Blacksom, Department of Surgery, University of Chicago, Chicago, for original investigation on the distribution of red and yellow bone marrow and the reticuloendothelial system in the bone marrow. Unfortunately the attendance of South Carolina physicians was very small, only about

half a dozen according to the latest reports. The Association will meet at Atlantic City next year and we always have a good attendance there. More details of the meeting will be given next month.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"IODINE IN THE TREATMENT OF THYROID DISEASE"

The well known relationship between iodine deficiency(1) and the development of goiter is no doubt the explanation of the tendency to administer it as a likely remedy in diseases of the thyroid gland. Though iodine deficiency is the most important fact in the causation of thyroid disturbances it does not follow that its administration will be curative. To the contrary, once the disease has developed iodine is of limited benefit, and moreover might be harmful. This being the case, it should not be used indiscriminately.

In connection with thyroid disease the benefit to be obtained from the use of iodine may be summed up briefly. Probably of greatest importance is its value as a preventative. Given in small dosage to pregnant women it protects them during the added strain of pregnancy and also the developing child. For this reason it should be given to children through the age of puberty, as it is during this period that the gland is subject to great physiological strain and is most likely to undergo abnormal hypertrophy. As a preventative it is naturally of greatest value in regions where goiter is endemic. For this purpose two drops of Lugol's solution once a week is the usual dose—one drop for children. Iodine in any other form is likely equally afficacious.

In cases of hyperthyroidism the administration of large doses of iodine induces a partial remission of the disease. It is important to bear in mind that this is only temporary. Also, the first remission is greater than subsequent ones—in other words, the patient's best response to iodine comes on shortly after beginning to take it. As operation will likely be necessary it is advisable to reserve its first administration for this time. This reduces greatly the dangers of the operation and often permits of the completion of the operation in one stage, whereas otherwise this could not be done. Used for this purpose the dosage is much larger—five to ten minims of Lugol's solution three times a day. There is considerable evidence that a much smaller dosage will produce the same results(2).

In cases of slight diffuse enlargement of the thyroid at the time of puberty, the administration of small amounts of iodine will often cause a reduction of the gland to normal size.

In cases of nodular goiter it is well recognized that iodine will not effect a cure. It may cause some reduction in size, which is only misleading. Should there be coexisting hyperthyroidism it is of value as a preoperative measure, as mentioned above.

At times the continuous administration of iodine seems to be harmful(3). Not infrequently it seems to induce a state of hyperthyroidism in cases of nodular goiter and of diffuse colloid enlargement—therefore apparently quiescent. Once the condition of hyperthyroidism supervenes, it is unlikely to subside upon discontinuing the iodine. Thyroidectomy is generally necessary.

In brief iodine should be used as a prophylactic measure and in preparation for operation. Also on some occasions to induce a remission in a severe state of hyperthyroidism, even though operation can not be done at the time. In some cases it is of value as a therapeutic test. Its use otherwise is not only ineffectual but at times harmful.

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PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 305 (26580). Jan. 10, 1936.

Case of Drs. Cannon and Smith

Student Wallace (reading):

Negro male, about 30 years of age, farmer, first admitted 12-21-34, discharged 1-16-35, readmitted 5-6-35, died 5-14-35.

Onset of illness in November 1934, with irregular "jumpy" heart action. About a week later he developed a pain in his back, gnawing in character, exaggerated by bending over, by cough and deep breathing. Since onset of pain has been "urinating freely," the urine being reddish in color. No burning on urination, but marked frequency, said to have to urinate every 15-20 minutes, day and night. Has had slight swelling of feet for several months. On examination had a generalized enlargement of all lymph glands, fine crackling rales in the bases of both lungs, very rapid pulse rate with numerous extrasystoles, possibly slight enlargement of heart to left, "rumbling" first sound, tenderness in both flanks and lumbar regions, especially on right. The urine was normal, contained no t. b. Hb. 70. No plas. in thick or thin smears (4 exam.). Blood Kolmer and Kline (and provocative) neg. Sputum (1 exam.) contained no t. b. Mantoux (1-1000) neg. Spinal fluid (1-9-35) total cells 85 per cu. mm., 98 per cent lymphs, 2 per cent polys, sugar "reduction diminished." EKG (1-2-35) "Paroxysmal tachycardia of auricular origin." Biopsy of cervical lymph gland (1-16-35) "Tuberculous Lymph Node." Had a moderate fever throughout this first admission, daily intermissions to normal. X-ray of chest and lumbo-sacral spine: see chart.

On second admission patient stated that abdominal pain had continued, now centered more about umbilicus than in back. Had fever almost every afternoon since discharge. Rarely had a cough, no night sweats, no hemoptysis. Has "lost a good bit of weight." Only occasional palpitation of heart since first discharge, no precordial pain. Burning on urination, with marked frequency.

Exam.: Temp. 102.2, pulse 128, resp. 36, B.P. 105-70. A poorly nourished and developed man. M.M. pale, skin warm and moist. Eyes, ears, nose and mouth normal. "Tonsils enlarged and inflamed." Posterior cervical and inguinal lymph glands enlarged. Chest: Expansion slightly greater in rt. apex than in left. No abnormal dullness or breath sounds. Few coarse rales in rt. base, none elsewhere. Mediastinum not widened. Heart: Apex in 5th interspace 3 1-2 inches to left of mid-line. Heart sounds of good quality, regular in rate and rhythm, quite rapid. No murmurs or rubs. Abdomen: Generalized tenderness, but no other findings.

Lab.: Urine (5-7-35) Sp.Gr. 1.005; alb. 2 plus; sugar, acetone and casts neg.; 6-8 leukocytes per HPF, no blood. Blood (5-7-35) Hb. 40 per cent D; WBC 16,500; RBC 3,880,000; achromia 2 plus; polys 87 per cent (seg. 75 per cent, stab. 10 per cent, juv. 2 per cent), lymphs 10 per cent, monos 3 per cent. Blood Kolmer and Kline neg. Sputum (3 exams) mixed bacteria 2-4 plus, but no t.b. X-ray of chest (5-7-35) See chart.

Course: Temp. continuously elevated for 6 days, although somewhat lower than on admission; some remission in fever, but no par-

ticular pattern. Pulse continuously above temp. curve on chart. Resp. 22-24 for last 3 days. 5-12-35 "Hard, discrete mass size of walnut in L.L.Q. which new developments, except hiccoughs appeared and continued for several days. Died 5-14-35 at 5:28 A. M.

Dr. J. H. Cannon (conducting): Mr. Bethea, will you open the discussion?

Student Bethea: I'd like to say first that my diagnosis is renal tuberculosis, secondary to primary tuberculosis of the lung. To establish this diagnosis: the patient complained of pain in the back, frequency of urination, and his urine was said to be of a dark reddish color. On the second admission, there was again abdominal pain; at this time the tubercular process had probably involved both kidneys. Further to support this tentative diagnosis, we have the afternoon fever and the weight loss. I would have expected that there would have been red blood cells in the urine, but I do not believe that the failure to find them can exclude this diagnosis. The presence of an anemia on the second admission suggests that there might have been some bleeding in the interim.

The chest findings apparently consisted only of rales in the bases of the lungs. There was a generalized lymph gland enlargement on both admissions, and a biopsy from one of these glands showed tuberculosis.

The only other diagnosis that seems to me at all likely is Hodgkin's disease, and I would rule that out on the basis of the biopsy.

Dr. Cannon: How do you explain the spinal fluid?

Student Bethea: The increased total cell count, the lymphocytosis and the lowered sugar content are a text-book picture of the spinal fluid findings in tuberculous meningitis, but there is nothing else on the record to suggest it.

Dr. Cannon: This man's glands were about the size of peas, had a shotty feel, were more or less discrete and were not tender. Is that your idea of tuberculosis of lymph glands?

Student Bethea: No, it is not, but the biopsy showed tuberculosis.

Dr. Cannon: Why do you say that the primary focus was pulmonary?

Student Bethea: I can hardly say that on the basis of the chest findings, but that is the commonest location for the lesion of initial infection.

Dr. Cannon: Can you explain the tachycardia and the extra-systoles or do you think they were merely a coincidence?

Student Bethea: I can offer no explanation for them. I think their occurrence must have been a coincidence.

Dr. Cannon: Do you believe that he had extensive pulmonary tuberculosis?

Student Bethea: Probably not. His primary lesion must have almost healed. There was no cough and his sputum was continuously negative for tubercle bacilli.

Dr. Cannon: How do you correlate the leukocytosis with the diagnosis of tuberculosis of the kidney?

Student Bethea: Secondary infection of the kidney is the best explanation that I can offer.

Dr. Cannon: What do you think is the likely explanation of the mass in the lower left quadrant of his abdomen?

Student Bethea: That mass may have been enlarged mesenteric lymph glands, or it may have been tuberculous peritonitis; a sensation as of an abdominal mass or masses is not uncommonly gotten in tuberculous peritonitis.

Dr. Cannon: Just one more thing. I note "onset of illness in November 1934 with irregular 'jumpy' heart." Isn't that an unusual mode of onset for tuberculosis?

Student Bethea: Yes, but the rest of the picture is fairly typical for tuberculosis. I cannot suggest an explanation; I think it merely coincidental.

Dr. Cannon: Mr. Freiberg, can you add anything?

Student Freiberg: I don't believe that we can prove tuberculosis of the kidney from the data given here. There was no hematuria, and the only positive urinary finding was on the second admission, when albumin and a few pus cells were found. It may be tuberculosis of the kidney, but I do not believe that the evidence is strong enough to make that diagnosis. Too, the only definite urinary complaint was frequency of urination. The pain in the back might well have been from diaphragmatic pleurisy.

Dr. Cannon: Well, what would be your diagnosis

Student Freiberg: I believe he had a generalized miliary tuberculosis.

Dr. Cannon how do you explain the tachycardia as the symptom that caused him to come into the hospital the first time?

Student Freiberg: I think that was a coincidence, too.

Dr. Cannon: And the spinal fluid?

Student Freiberg: The spinal fluid findings are quite typical of tuberculous meningitis, but nothing else on the record suggests it.

Dr. Cannon: What do you think was the extent of the pulmonary involvement?

Student Freiberg: From the physical findings it would be very difficult to say, as they are relatively indefinite. I would like to see the x-ray.

Dr. Lynch (demonstrating x-rays): This is the first x-ray, taken in December 1934. Dr. Rudisill reports "The lungs are clear, the heart is not enlarged." This other film, taken at the same time, was reported "There is no evidence of pathology in the lumbo-sacral spine or pelvis."

Dr. Cannon: Would either Mr. Bethea or Mr. Freiberg care to change his diagnosis now?

Student Bethea: No, but I would like to see the other x-ray.

Dr. Lynch (demonstrating x-ray): This film, taken May 7, 1935, was reported by Dr. Rudisill, "There is now advanced, disseminated bilateral pulmonary tuberculosis." This film and the previous negative one were about six months apart.

Dr. Cannon: I don't know that there is anything more to be gotten from the record. But it is very interesting that a man should come in, the x-ray of whose chest is clear, but showing a positive diagnosis of tuberculosis from a lymph node biopsy, and that six months later his lungs should be full of tuberculosis. And his symptoms on the first admission had reference to his"jumpy" heart. There is a question whether the pain in the back indicates renal involvement, or is a result of pleurisy or disease of the nerve roots. Another thing of much interest to me is the spinal fluid. Dr. Townsend, would you care to comment on that? This spinal fluid was drawn on January 9th, a few days before his discharge and showed 85 cells per cu. mm. and 98 per cent lymphocytes.

Dr. Townsend: There isn't much to be said to explain it. It certainly suggest tuberculous meningitis, but his further clinical course does not substantiate it.

Dr. Cannon: Does anyone else care to comment? The electrocardiogram on his first admission showed a rate of 160 per minute, and was interpreted as paroxysmal auricular tachycardia, altho there is possibly some question about this finding.

Dr. Lynch: I will first show what was found, and will then try to trace the course of the disease.

The lesions were typically tuberculosis, but with one very unusual feature: there was a tuberculosis of the myocardium itself.

In the upper part of the right lower lobe of the lung there was an old scar, and beneath this an encapsulated area of caseation, in the region of this small dense shadow shown in both x-rays. This was the primary lesion, and was not large. In addition to this old lesion, there was widespread tuberculosis of both lungs, of the mediastinal lymph glands, a tuberculous pericarditis with fibrous adhesions obliterating the pericardial sac.

As you can see here (demonstrating autopsy specimens), there is a nodular lesion encircling practically the whole of the right auricle, extending from the orifices of the two venae cavae to the tricuspid ring. This nodular mass is quite rigid and thick. Beneath the endocardium, and eroding it in many areas, are large tubercules directly exposed to the circulation.

In addition there is a widespread tuberculosis of the right kidney, of the spleen, pancreas and peritoneum. None of these areas was very old, although all were older than the usual miliary tuberculosis.

It is very difficult to trace out the course of the disease in this case. I believe that he had a primary inhalation tuberculosis of the right lung and mediastinal lymph nodes, and that the tuberculosis of the pericardium devolved at that time from extension from the mediastinal glands. I believe that after adhesions had

formed between the two years of the pericardium, with new vascular and lymphatic channels formed there, the myocardium itself was directly invaded. When he first came in in November complaining of his "jumpy" heart, he undoubtedly had tuberculosis of the heart.

The frequency of urination and the pain in the back came on at about the same time as the heart symptoms. I am inclined to assign these symptoms to a stricture of the right ureter, which was found at autopsy, because the tuberculosis of the kidney appears too uniform and too recent to have been causing symptoms for that length of time. This is not the usual kidney tuberculosis, which shows an extending area of caseation necrosis, with excavation and cavitation. Instead this is a nodular form of tuberculosis, extending thruout the kidney parenchyma, as from a recent blood-borne dissemination which has extended beyond the usual miliary form.

With this myocardial tuberculosis feeding tubercle bacilli into the pulmonary circulation, one can readily understand the widespread, uniform dissemination in the lungs. There is no cavity as one would expect if the whole pulmonary lesion were one of inhalation. Although the nodules as seen on the x-ray (and as noted in the specimen) are larger than the usual miliary form of tuberculosis, still their uniform and widespread scattering thruout both lung fields, and especially the fact that the lesion appeared very rapidly, argue for blood-borne infection. It will also at least partially explain the lack of physical findings, the lack of symptoms, and the absence of tubercle bacilli from the sputum: the interstitial tissue of the lungs was heavily involved, but the bronchi and bronchioles were free. This differentiation is of some practical importance, as an occasional case of blood-borne tuberculosis to the lungs will heal if the primary focus, from which the bacilli are disseminated, can be eradicated.

Such a degree of widespread tuberculosis is seldom seen, as the opportunity is seldom offered for continued dissemination of bacilli with each cardiac systole.

A thing that I cannot explain is the comparative clearing up of heart symptoms between his two admissions. On his second admission the heart rhythm and rate were good as contrasted to the situation on the first admission. I would fancy that such extensive disease of the right auricle would greatly distort normal impulse formation and transmission.

There are not many cases of tuberculosis of the myocardium on record, and this case is not presented to teach you to diagnose that condition. It is very unlikely that you will ever see another such case. But this case illustrates well the possible modes of extension of the bacilli and the bizarre effects sometimes seen.

Unfortunately, consent to examine the brain was not obtained, so we are unable to clear up that question.

Dr. Cannon: In trying to correlate the clinical cardiac findings with the heart lesion found at autopsy, it is interesting to note that the pathology was largely in the walls of the right auricle, including the inter-auricular septum. Hence the sino-auricular node, where the cardiac impulse is formed, must have been destroyed. Why this resulted in a tachycardia rather than a bradycardia, I do not know; conceivable the lesion could have caused either. And I would have expected the electrocardiogram to have shown much more evidence of disease than it does. The P waves are apparently normal; (altho they cannot be made out in Lead I), and the P-R interval, representing intra-auricular conduction time, is normal.

MINUTES

MINUTES OF THE HOUSE OF DELEGATES SOUTH CAROLINA MEDICAL ASSOCIATION

Tuesday, April 21, 1936

The House of Delegates met in the ballroom of the Poinsett Hotel, Greenville, on Tuesday evening, April 21, 1936, and was called to order by the President, Dr. R. C. Bruce, at eight-forty o'clock.

The report of the Credentials Committee was called for, and Dr. George T. Tyler, Chairman, reported 59 members of the House of Delegates registered so far. The President declared a quorum present.

President Bruce spoke as follows:

"Gentlemen, after the death of our President, Dr. Harmon, last December, the Council asked me to assume the office of president. This was following the precedent of two years ago, after the death of Dr. Egleston. The death of Dr. Harmon, of course, has interfered with the plans, but I have tried to carry on as best I could during the year. I ask for your cordial sympathy and help.

"The affairs of the Association are in good order. The membership has shown some increase during the year. The type of scientific work carried on by the component societies has been of a high order, and we feel that organized medicine is making good progress towards meeting all situations that develop. The condition of our journal during this year has been much improved. The number of scientific articles has been increased, and they have been of a very high standard. The work of Dr. Hines and of his associate, Dr. Waring, I think has been very commendable. The size of the journal has been increased recently and its general appearance very much improved, as you no doubt have observed. The amount of revenue from the advertising has been considerably increased and has been of great help to us.

"The Secretary will present to you a little later tonight a detailed report and compilation of facts from the various state and county societies throughout the South Atlantic States which have been making efforts toward meeting the changed social and economic conditions. This report covers a rather extensive amount of work being done by the state and county societies, which work has necessitated the expenditure of considerable money. In order that we may meet the situation in our own society it appears that it will be necessary or at least advisable that we increase our dues, in order to function as the various state societies throughout the South Atlantic States have been functioning; and it is my opinion that our dues should be increased to $7.50. I make this recommendation to the House and hope that you will consider the matter and take some action.

"Our Constitution and By-Laws are, in my opinion, inadequate to meet the present changed conditions of operation of our society, and I should like to recommend that a committee be appointed to revise and bring up to date our Constitution and By-laws. I so recommend.

"I should also like to suggest to the House that, in view of the enormous amount of work necessarily coming before the House of Delegates in its one evening session, it appears to me to be advisable that we revert back to our constitutional provision of having a session of the House of Delegates on the afternoon of the first day, finishing up the work of the House at an evening session. I recommend that this be considered and that the House take some action on this matter.

"I also should like to recommend that a committee on public relations be appointed, in order to take charge of that phase of the work dealing with public matters originating from social and legislative causes, and I suggest to the House that we have such a committee.

"Finally, I am appointing this evening, in order to facilitate the work of the House, a Reference Committee to take cognizance of any important resolutions which may come up during the evening, this Committee to report back to the House before adjournment. I appoint, as the members of that Committee, Dr. Thomas H. Pope, of Newberry; Dr. Thomas N. Dulin, Clover; and Dr. D. J. Barton, Anderson."

The report of the Secretary-Treasurer was next called for. Secretary E. A. Hines read the report, which was accepted and filed.

Dr. J. R. Des Portes, of Fort Mill, Chairman of the Board of Councilors, made the following report:

Report of Board of Councilors

The Council held a meeting this afternoon at which the individual councilors made their reports. These were good, for the most part, but one councilor made the pitiful report that he had received no answer from any county secretary in his district to his letter asking for information as to the activities of the county societies.

This afternoon Mr. Dukes, Chairman of the Industrial Commission of South Carolina appeared before the Council and explained to us several features of the Industrial Compensation Law, especially as regarding fees paid to us. Mr. Dukes is a very pleasant gentleman. He came to us in a spirit of cooperation, to help us if he could. There is, as you know, a place on all reports in industrial-compensation cases for charges for house visits, office calls, etc. Mr. Dukes asks that, when a doctor renders a bill that has to go to the Commission, he

attach a report if the bill appears to be the least bit large. Why? Because, while the men down there want to do the fair thing, they are not mind readers. So, if your bill appears larger than reasonable, please attach an explanation to it, that you had to call in another doctor, that you had to have a nurse, etc.

The Journal has had an unusually good year. The advertising has picked up considerably, and I think the quality of the Journal is picking up.

One of the county-society secretaries in my district said that he had written and sent in a report of the meeting of his society and that it had never come out in the Journal. The Journal happened to come on the same day I got his letter. I looked through it, and there was the report, so I called his attention to it. Necessarily, what you send in to the Journal can not always appear in the next issue. But when you have news of interest, send it in.

The Lexington County Medical Society wishes for some reason to withdraw from the three-county Ridge Medical Society, of which it has been a part for some time. That is before the Council as a legal matter and will be taken up tomorrow afternoon at the meeting of the Council.

The Council met repeatedly this year; we have had more calls for special meetings than in a good many years. Most of the members have attended them and have transacted the business to the best of their ability. One of these meetings was called in order to carry out the instructions of the House of Delegates at Florence last year, to secure an assistant editor for the Journal. We were fortunate enough to secure the services of Dr. J. I. Waring, of Charleston. While I took part in his selection, I wish to say that I think it was a wise choice.

I have here the financial reports of the Secretary and of the Journal and also the report of the auditors who audited the books.

(Dr. Des Portes then read the summaries from the financial reports, stating that they would be published in detail in the Journal.)

I call your attention again to the meeting of the Council tomorrow at five o'clock. If anyone knows of any reason why the Lexington County Medical Society should not be recognized as a county unit, please appear before the Council to state such reason.

One of the things that came out at the meeting of the Council this afternoon was that we had to reprimand one of our officers for not drawing his salary when he had the money in the bank to do it, just in order to make a little better showing for the Association. I want to pay tribute to Dr. E. A. Hines for doing that.

The report of the Board of Medical Examiners, which had been made to the Council at its afternoon meeting, was received as information.

The report of the State Board of Health was read by Dr. F. M. Routh, the Chairman, and was received as information.

Dr. J. H. Cannon, of Charleston, one of the Delegates to the American Medical Association, read the report for the delegation, which was received as information.

The President called for the report of the Committee on Necrology. The Secretary stated that none of the members of the Committee were able to come to the meeting or to submit a report but that he had compiled a list of the physicians who had died in the past year. Secretary Hines then read the names of the deceased physicians while the members of the House stood in respect to their memory.

The report of the Committee on Maternal Welfare was next called for, and Dr. Robert E. Seibels, Chairman, gave a summary of the Committee's printed report. President Bruce extended the thanks of the House to Dr. Seibels and his Committee for their work.

Dr. Hugh Smith, of Greenville, read the report of the Committee on Cancer in the absence of Dr. J. Richard Allison, the Chairman, who was unable to attend the meeting because of illness.

The report of the Committee on Medical College was read by Dr. Robert A. Abell, the Chairman.

New Business

Dr. C. B. Epps, of Sumter, offered the following resolution and moved its adoption:

"Be it resolved that the President appoint a committee of three members to work out a plan by which the county medical associations will have more voice in the establishment and control of the county boards of health, and that this committee shall report to the South Carolina Medical Association at the 1937 annual meeting."

After a discussion by Dr. James A. Hayne, State Health Officer, the motion for the adoption of the resolution was put to vote and was unanimously carried.

(Dr. Hines, Secretary, presiding at the request of the President.)

Dr. George T. Tyler, Greenville, offered the following two resolutions:

"Inasmuch as there are a number of doctors belonging to the State Association who would gladly be of some service and who could from time to time inject new blood into the organization, but, as things are, due to the fewness of elective places and the tendency mechanically to re-elect each year officers to succeed themselves, they are not called upon to serve,

"Therefore be it resolved that from now on, with the exception of the Secretary, no officer of the State Medical Association, nor any member of any committee or board, shall be eligible to serve more than two successive terms."

"Since, in two successive years, our President has died while in office and the President-Elect has had the unexpired term to fill, as well as his own term,

"Therefore be it resolved that we modify the Constitution by electing, in addition to the President-

Elect, a Vice-President, who shall assume the office of his superior whenever the necessity arises.

(Signed)
George T. Tyler, Jr.
Robert E. Abell
F. H. McLeod
Floyd D. Rodgers."

Secretary Hines as presiding officer, stated that the two resolutions offered by Dr. Tyler, since they involve changing the Constitution and By-laws, will have to lie upon the table until the next annual meeting.

Dr. Tyler then announced the dates and places for holding the State tuberculosis clinics.

Dr. J. H. Cannon, of Charleston, offered the following resolution:

"Resolved that the South Carolina Medical Association adopt an additional by-law creating the office of speaker of the house, such officer to be elected annually, and the duties of such officer to be to preside over the House of Delegates." This resolution was laid upon the table, to be acted upon next year.

Dr. Floyd D. Rodgers, of Columbia, offered a proposed amendment to the Constitution of the South Carolina Medical Association, as follows:

"Article Section

"Immediately following the election of officers at the annual meeting of the House of Delegates, an employee to be known as House Parliamentarian shall be elected by the members of the House to serve for one year or at the pleasure of the House. He shall be eligible for re-election. The qualification of the parliamentarian so elected shall be that he hold membership in the South Carolina Medical Association, that he possess a judicial temperament, and that he possess a thorough knowledge of parliamentary procedures. His duties shall be to sit with the President at all regular or special meetings of the House of Delegates and act in a purely advisory capacity to the President on all questions of parliamentary procedure which may arise. He shall have no vote in the House and he shall have no voice in the meetings save to explain any given parliamentary ruling at the request of the President. The President shall not necessarily be bound by any ruling suggested by the parliamentarian, and any such ruling will, of course, always be subject to appeal from the floor, or by appeal requested by the president. The parliamentarian, for his work and for his maintenance of intimate knowledge of rules of procedure, shall be given an annual honorarium of ten dollars out of the treasury of the Association."

(President Bruce resumed the chair.)

Miscellaneous Business

On motion of Dr. D. L. Smith, amended by Drs. George T. Tyler, James A. Hayne, and Hugh Smith, the Secretary was directed to send telegrams to Dr. E. F. Parker, Charleston, Dr. R. S. Cathcart, Charleston, Dr. Julius H. Taylor, Columbia, Dr. A. Earle Boozer, Columbia, and Dr. J. R. Allison, Columbia, expressing the regret of the House at their absence.

The President asked for invitations for the 1937 convention. On motion of Dr. C. H. Blake of Greenwood, seconded by Dr. Floyd D. Rodgers of Columbia, the House voted to meet in Columbia next year.

Election of Officers

The President called for nominations for President-Elect. Dr. F. H. McLeod nominated Dr. Julius H. Taylor, of Columbia. Dr. George R. Wilkinson nominated Dr. W. L. Pressly, of Due West. Dr. D. L. Smith nominated Dr. Francis B. Johnson, of Charleston. The nominations of Dr. Taylor and Dr. Pressly were seconded. Dr. W. P. Timmerman also seconded the nomination of Dr. Taylor. The nomination of Dr. Johnson was seconded. Dr. J. H. McIntosh seconded the nomination of Dr. Taylor, as did Dr. J. W. Jervey and Dr. C. B. Epps. Dr. J. R. Young seconded the nomination of Dr. Pressly. Dr. J. H. Cannon seconded the nomination of Dr. Johnson.

On motion of Dr. William Weston, the nominations were closed. The Secretary stated that the voting strength of the House was 76. A vote by ballot was then taken, resulting in the election of Dr. Julius H. Taylor as President-Elect. On motion of Dr. D. L. Smith, the election was made unanimous.

On motion of Dr. William Weston, the Secretary was instructed to send a telegram to Dr. Taylor informing him of his unanimous election as President-Elect.

Dr. E. A. Hines was unanimously re-elected as Secretary-Treasurer.

The following members of the Board of Councilors were elected to succeed themselves:

Second District—Dr. T. A. Pitts, Columbia.

Fourth District—Dr. Hugh Smith, Greenville.

Sixth District—Dr. Douglas Jennings, Bennettsville.

Eighth District—Dr. G. M. Truluck, Orangeburg.

Dr. A. Earle Boozer, of Columbia, and Dr. E. Marvin Dibble, of Marion, were unanimously elected members of the Board of Medical Examiners to succeed themselves.

Delegate to the American Medical Association: Dr. William Weston nominated Dr. J. H. Cannon, of Charleston, to succeed himself. Nomination seconded by Dr. Kenneth M. Lynch. Dr. Cannon was elected.

As Alternate, Dr. Floyd D. Rodgers nominated Dr. O. B. Mayer, of Columbia, and Dr. Mayer was elected.

No further business appearing, the House of Delegates then adjourned *sine die*, at twelve-ten o'clock a. m.

REPORT OF THE SECRETARY-TREASURER OF THE SOUTH CAROLINA MEDICAL AS- OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

DR. E. A. HINES,
Seneca, South Carolina

It is gratifying to report progress in most of the activities of the Association at the close of the fiscal year, December 31, 1935. The total membership was 715 which was a substantial increase over the preceding year. The finances of the Association and Journal show increases also as will be noted in the report of the Treasurer to be presented by the Chairman of the Council.

The scientific aspects of the Association during the year were highly satisfactory. All of the District meetings and the majority of the County meetings had good programs and an excellent attendance.

In the early part of the year economic problems loomed large on the horizon. These included the putting into effect the new Workmen's Compensation Law and the study of hospital care. The agitation in regard to the threat of state medicine added to the complexity faced by organized medicine all over the country. Toward the latter part of the year many of these menacing problems apparently quieted down but of course they have not been solved.

The experience, however, has stimulated greater efforts in practically every state in the union to build up stronger organizations particularly in the County Unit which is the fundamental unit of organized medicine. Towards this end the small County Society problem continues to challenge the keenest minds as to how they may be made to function in a creditable way. It is not unusual for the State Secretary to receive a letter like this which carries with it an appeal that should be met in some way:

April 16, 1936

To the Secretary S. C. Medical Asso.
Dear doctor:

Since there is no organized medical society in this county I have not been able to obtain a program of the State meeting which is to be held in Greenville on the 21st to 23rd. Will appreciate it if you can send me several printed programs as I am sure some of the other doctors here in the county would like to have programs of the meeting.

Hoping that the State meeting will be successful and that I may have the pleasure of meeting you there, I am,

Sincerely yours,

In the 1934 A. M. A. Directory South Carolina is accredited with 1,329 doctors. If the State Medical Association is to be fully prepared to meet the demands of the next few years there should be at least 1,000 members in active affiliation. The larger counties have covered their possibilities very well so that the increase must come from such counties as the ones from which the above letter comes. Various plans have been tried in many parts of the country without complete success and this makes the challenge all the more urgent.

During the year the Secretary's office cooperated in meeting another demand which is growing in significance, that is, post graduate medical education. There is no way yet open for more than a few doctors to leave their practices and enjoy the benefits of even short refresher courses in the great medical centers. The only solution is to carry post graduate education to the doctor in the field. During 1935 an admirable gesture was made in bringing Dr. J. R. McCord of Atlanta to South Carolina to inaugurate courses on obstetrics. His visit covered a large part of the State. As a result the Piedmont Post Graduate Clinical Assembly was organized at Anderson in September and the scope of lectures considerably enlarged. There was an attendance of more than 100 doctors and the success of the new venture assured. One of the most far reaching educational factors in medicine in the United States is that of Fellowship in the American Medical Association. There are only three hundred and forty five fellows residing in South Carolina, much less than half of the active practitioners of the State. A fellow of the A. M. A. has the benefit of the Journal of the American Medical Association which as a stimulating factor has no equal anywhere in the world. There are of course many other advantages. Your Secretary attended the annual conference of Secretaries and Editors at the Headquarters Building in Chicago in November and participated in the deliberations there. One particular feature was that of a special program dealing with the details of editing and publishing a state medical journal.

Some State societies have creditable headquarters buildings, and modern equipment but they are few in number. A very good substitute has been available, however, at our own State headquarters. During the year new equipment has been added. A new typewriter, a new mimeograph machine and a new addressograph are now in service. The rooms have been in process of remodeling and a blue print and plans for a larger library completed.

The Journal facilities have been greatly increased and it has enabled the Journal to be published earlier in the month and improved otherwise. The same printing firm has handled the Journal for about twenty years and is located in Greenville. This firm has constructed a new building recently and otherwise modernized their plant. It is one of the largest in the State.

With the extensive revision of the United States Pharmacopoeia Number X1 and the revision of the National Formulary Number six just off the press and to become official in June your Secretary believes the time has come for the State Medical Association to take cognizance of the increasing tendency for physicians to prescribe proprietaries and specialties instead of the official preparation. Your Secretary has conducted a limited survey and determined that fifty

five per cent of prescriptions are mainly outside of these two official volumes. Other surveys are being conducted in cooperation with the Secretary's office by the School of Pharmacy of the South Carolina University and the School of Pharmacy of the South Carolina University and the School of Pharmacy of the Medical College of the State of South Carolina. The members of the House of Delegates and the profession generally are urged to join in this campaign. Some State Medical Societies have entered into an intensive joint plan with the State Pharmaceutical Societies to bring to the attention of the physicians model prescriptions from the National Formulary much more economical and just as effective often times as the higher priced specialties of pharmaceutical houses or ready made prescriptions. The New Jersey State Medical Society Journal in the April issue carries a double page head-line type series of such prescriptions in the center of the Journal, as shown here. Members of the Council and other officers may well present this matter to their respective societies and definite programs should be carried out as opportunity offers. If this is done prescription writing may not become a lost art as many people believe is the case now.

The changing times calls for an appraisal of the entire resources of the South Carolina Medical Association to meet the issues of organized medicine in general and to this end a survey has been made of the activities of all of the State Medical Societies in the United States. This survey includes first the annual dues of the other state medical societies and second the major projects for which this money is expended. The survey discloses the fact that three fourths of all the State Medical Societies have larger dues than South Carolina. It must be borne in mind that the dues of the South Carolina Medical Association stand at five dollars ($5.00) the same as they were when the Association was organized eighty eight years ago. The large majority of other State Medical Societies have been forced to increase their dues in the past few years. A list of these dues and the States follow herewith:

Alabama—Councilors $10.00, Members $3.00. There are a large number of Councilors; Arizona—$12.00; Arkansas — $5.00; California — $10.00; Colorado—$10.00; Connecticut—$5.00; Deleware—$10.00; District of Columbia—$20.00; Florida—$7.00; Georgia—$6.00; Idaho—$12.00; Illinois—$8.00; Indiana—$7.00; Iowa — $10.00; Kansas — $10.00; Kentucky — $5.00; Louisiana — $6.00; Maine — $8.00; Massachusetts — $10.00; Michigan—$10.00; Minnesota—$15.00; Mississippi—$4.00; Missouri—$8.00; Montana—$5.00; Nebraska—$10.00; Nevada—$10.00; New Hampshire —$6.00; New Jersey—$13.00; New Mexico—$5.00; New York—$10.00; North Carolina—$10.00; North Dakota—$5.00; Ohio—$5.00; Oklahoma—$4.00; Pennsylvania—$7.50; Rhode Island—$10.00; South Dakota —$5.00; South Carolina—$5.00; Tennessee—$6.00; Texas—$8.00; Utah—$10.00; Virginia—$5.00; Washington State—$5.00; West Virginia—$10.00; Wisconsin—$15.00; Wyoming—$10.00.

It will be noted that nearly all of the South Atlantic States have been forced to increase their annual dues. The last one of these states is North Carolina with dues increased to ten dollars ($10.00) in 1935. In a break down of their disbursements it is noted that one major item alone is twenty-five hundred dollars ($2500) for legislative activities. California, perhaps, is in the lime light now for its many activities as much as any State. They have dues of ten dollars. The major interests for which this money is expended are as follows:

1. California and Western Medical Journal.
2. Legislation.
3. Post Graduate Courses for Members.
4. Annual Meeting.
5. Committee Expenses—$30,000 in 1935.
6. Department of Public Relations—$10,000.00.
7. Press Releases.
8. Public Health Education.
9. Fairs and Public Health Exhibits.
10. Legal-Court Opinions from the Supreme Court.
11. Defeat of Cults.
12. Delegates to A. M. A.
14. Headquarters Expenses.
15. Council Expenses.

A few still provide for mal-practice insurance. A few states employ a layman, often a man with newspaper experience as Executive Secretary. One of these men, however, is a lawyer and gives his whole time to the work. This State is Kansas where the American Medical Association will meet in May.

Assuredly no State Medical Association has ever been so bereaved as to have lost two Presidents in one fiscal year. This situation faced us during the year 1935. The Secretary's office was called upon therefore as never in its history to meet these sudden emergencies arising from the loss of our leaders. Thanks to the cooperation of the President-Elect, the members of the Council, and the members of the Association the work went on without serious interruption. Your Secretary is profoundly grateful for this unreserved helpfulness in a great emergency. The Association is now ready to go forward and keep step with the march of progress everywhere evident in 1936.

REPORT OF TREASURER

Seneca, S. C. April 19, 1936

Dr. E. A. Hines, Sec.-Editor,
South Carolina Medical Association,
Seneca, S. C.
Dear Sir:

At your request, I have audited the books of the South Carolina Medical Association and the Journal of the South Carolina Medical Association for the year 1935. Hereto attached are statements of receipts and disbursements with certificates supporting Postal and bank balances reported.

A substantial gain is shown in membership dues, subscriptions, and advertising over 1934. A total

of 55 per cent has been paid on balances in the Seneca Bank, leaving a total amount of $1,190.83 due to the Association and Journal from this closed bank.

Yours truly,
Frances R. Richardson,
Auditor.

The South Carolina National Bank
Seneca, S. C.
April 18, 1936

Dr. E. A. Hines, Treas.,
South Carolina Medical Association,
Seneca, S. C.
Dear Sir:

This is to certify that there was on deposit in the South Carolina National Bank, Seneca, S. C., as of December 31st, 1935, in the name of Dr. E. A. Hines, Treasurer, South Carolina Medical Association the sum of $942.34.

We further certify that there was on deposit to the credit of the Journal of the South Carolina Medical Association, as of December 31st, 1935, the sum of $1661.38.

Very truly yours,
C. V. Stribling, Manager.

The South Carolina State Bank,
Receiver, The Seneca Bank,
Seneca, S. C.
April 20, 1936

Dr. E. A. Hines,
Seneca, S. C.
Dear Sir:

We certify that as of December 31, 1935, the balance due on claim of Dr. E. A. Hines, Treasurer of the South Carolina Medical Association against the Seneca Bank (defunct), was $269.34.

We further certify that the claim of the Journal of the South Carolina Medical Association against the Seneca Bank as of December 31st, 1935 was $470.01, and balance due on Certificate of Deposit $451.48.

Very truly yours,
The South Carolina State Bank,
Receiver, the Seneca Bank
(By) C. V. Stribling, Manager.

United States Post Office,
April 20, 1936
Seneca, S. C.

Dr. E. A. Hines,
South Carolina Medical Association,
Seneca, S. C.
My dear Sir:

An examination of the accounts in this office shows that your Postal Savings account has a balance, as of December 31, 1935, of $1,000.

Yours very truly,
Ray Phillips, Postmaster.

STATEMENT OF RECEIPTS AND DISBURSEMENTS SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31st, 1935

Receipts

Balance in Banks Jan. 1, 1935		
Defunct Seneca Bank	$ 269.34	
S. C. National Bank	510.21	
Postal Savings	1,000.00	
		$1,779.55
Membership Dues		1,935.00
Refund Check Tax		.02
		3,714.57

Disbursements

Printing		497.86
Salary Stenographer		200.00
Salary Sec.-Editor		150.00
Office Equipment		100.00
Stamps		40.14
Travel Expenses Sec.-Editor		100.00
Expenses Official Stenographer Convention		109.74
Expenses Invited Guest Convention		58.65
Expenses Two Delegates American Medical Association		175.00
Sundries		46.50
Annual Audit		**25.00**
Balance in Banks Dec. 31, 1935		
Defunct Seneca Bank	269.34	
S. C. National Bank	942.34	
Postal Savings	1,000.00	2,211.68
		3,714.57

STATEMENT OF RECEIPTS AND DISBURSEMENTS JOURNAL SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31st, 1935

Receipts

Balance in Banks Jan. 1, 1935		
Defunct Seneca Bank	$ 921.49	
S. C. National Bank	851.76	
		1,773.25
Subscriptions		1,290.00
Advertising		2,049.48
Refund		2.34
		5,115.07

Disbursements

Printing		1,350.00
Salary Sec.-Editor		
Bal. Due 1934	512.20	
Paid on 1935	409.00	

Salary Stenographer		150.00
Office Equipment		50.00
Sundries		51.00
Stamps		10.00
Balance in Banks Dec. 31, 1935		
Defunct Seneca Bank	921.49	
S. C. National Bank	1,661.38	2,582.87
		5,115.07

COMBINED STATEMENT OF RECEIPTS AND DISBURSEMENTS SOUTH CAROLINA MEDICAL ASSOCIATION AND JOURNAL OF SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31st, 1935

RECEIPTS

Balance in Banks Jan. 1, 1935		
Defunct Seneca Bank	$1,190.83	
S. C. National Bank	1,361.97	
Postal Savings	1,000.00	
		$3,552.80
Advertising		2,049.48
Subscriptions		1,290.00
Membership Dues		1,935.00
Refunds		2.36
		8,829.64

DISBURSEMENTS

Printing		1,847.86
Salary Stenographer		350.00
Salary Sec.-Editor		
Bal. Due 1934	512.20	
Paid on 1935	559.00	
		1,071.20
Travel Expenses Sec.-Editor		100.00
Expenses Official Stenographer Convention		109.74
Expenses Invited Guest Convention		58.65
Expenses Two Delegates American Medical Association		175.00
Office Equipment		150.00
Stamps		50.14
Sundries		97.50
Annual Audit		25.00
Balance in Banks Dec. 31, 1935		
Defunct Seneca Bank	1,190.83	
S. C. National Bank	2,603.72	
Postal Savings	1,000.00	
		4,794.55
		8,829.64

Assets as of Dec. 31, 1935		
Cash in Banks and Postal Savings		4,794.55
Furniture and Fixtures		874.77
		5,669.32
Liabilities as of Dec. 31, 1935		
Due E. A. Hines on Salary 1935		1,491.20
Due Stenographer on Salary 1935		250.00
		1,741.20

LIST OF MEMBERS BY COUNTIES, 1935

	Paid	*Hon.*
Abbeville	4	5
Aiken	8	
Allendale	1	
Anderson	34	5
Bamberg	9	
Beaufort-Jasper	2	
Berkeley	7	
Calhoun	1	
Cherokee	9	2
Chesterfield	7	
Chester	7	5
Charleston	86	9
Colleton	9	
Columbia	88	21
Darlington	11	
Dillon	2	
Edgefield	3	
Fairfield	3	
Florence	18	1
Greenville	88	9
Greenwood	18	
Georgetown	2	
Hampton	1	
Horry	1	
Kershaw	14	
Lancaster	7	
Laurens	5	4
Lexington	3	2
Marion	8	
Marlboro	8	1
Newberry	19	1
Oconee	4	4
Orangeburg	20	
Pickens	12	3
Saluda	2	
Spartanburg	45	6
Sumter	17	5
Union	10	5
Williamsburg	9	
York	22	3
	624	91
Honorary Fellows	91	
Total Membership	715	

OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., Greenville, S. C.

FACTS AND REFLECTIONS OBTAINED FROM A STUDY OF THE REPORT OF THE COMMITTEE ON MATERNAL WELFARE

Among the highlights of the recent meeting of the House of Delegates of the South Carolina Medical Association was the report of the committee on maternal welfare so ably presented by the committee's chairman, Dr. Robert E. Seibels of Columbia. The full report was voluminous and detailed, and printed copies were distributed to the delegates, but Dr. Seibels gave a verbal resume of his committee's findings. The committee is to be commended for the care and thoroughness of its work, and the chairman, who with the assistance of his no less intelligent than charming wife worked up the statistical compilations, deserves the thanks of all those interested in maternal welfare in South Carolina.

Certain facts in the report are deserving of reiteration, and give rise to reflections, a consideration of which should prove helpful.

Three hundred and eighty-four death certificates were studied by the committee, but because of insufficient obtainable data only 235 deaths were included in the analysis. During the period under study, July 1, 1934, to June 30, 1935, there occurred 39,698 live births, with a mortality of 9.6 per thousand. This is slightly more than 50 per cent higher than the latest available figure for the registration area of the United States, namely, 6.3 per thousand live births, a difference too great to ascribe either to a lack of skill on the part of South Carolina physicians or to the incidence of delivery of midwives. It gives rise to the thought that perhaps the number of live births reported is far too low, the deaths being more certainly reported. It would be interesting to know what effect upon the mortality standing of our state a complete reporting of live births would make. Unfortunately it is not only the midwives who are careless in filling birth certificates.

Further, the committee found sufficient evidence to warrant the elimination of 29 deaths from the study on the grounds that these deaths were not puerperal. Many of those retained required much investigation and some analytical deduction to determine just what was the true cause of death. Surely this was due not to ignorance or to a desire to hide the true facts, but to carelessness and incompleteness in statement of the facts. By far the majority of the certificates eliminated were signed by physicians rather than by laymen.

Of the live births reported for the year under study, only half were attended by physicians, the other being attended by midwives or other laywomen, a distinction without a difference in most instances making it practicable to include both groups in the term midwives. Physicians delivered 17,058 white children and 3,013 colored children, while midwives delivered 2,422 white children and 17,205 colored children, almost a reversal of figures for white and colored. In Georgetown county only 49 births, both white and colored, were reported by physicians, whereas 425 were reported by midwives. If midwives are responsible for our high mortality rate, then they must either be better trained and supervised, and be made to report their cases when engaged so that some effort can be made to give such cases prenatal care, or else we may expect no great improvement. Reference will again be made to the matter of prenatal care for these cases.

Of the total number of deaths studied, 76 per cent were caused by a group of three conditions, namely, toxemia of late pregnancy, septicemia (not associated with abortion), and hemorrhage, either antepartum, intrapartum or postpartum, and 59 per cent were due to the first two conditions named. Certain it is that fatal toxemia and sepsis are largely preventable, and deaths from hemorrhage should be very rare. Deaths from toxemia are an index of the amount and kind of prenatal care

received, and deaths from septicemia are an index of obstetrical conscience and knowledge of the attendant.

Deaths from toxemia of late pregnancy and those from septicemia, were one-half again as frequent in the colored women as in the white, while deaths from hemorrhage in the colored were three times those in whites. Does the relative mortality from toxemia indicate better prenatal care for the whites? It should, but it does not, because of the total number of women who died, only five received what by any standard could be termed adequate prenatal care. The probable explanation is that more white women received medical care after the toxemia had developed, and so more of them were saved from death, than was the case with colored women. Twenty of the 100 women who died of late toxemia were never treated by a physician and in all others a midwife was relieved by a physician, probably when the disease was far advanced. Thus the doctor did not have a chance in one-third of these cases, and likely in many of the other two-thirds he had little better chance, and doubtless these facts apply to colored women nearly twice as frequently as they do to white women.

The case of the doctor cannot be made hardly so good in the septicemia deaths. Thirty-two of the 54 cases dying of sepsis, were delivered solely by physicians, while in 22 there was a midwife alone or a midwife relieved by a physician. Thus in 60 per cent of these deaths there was no divided responsibility. Was the physician more careless with his colored patients than with his white patients, or is there some other explanation, perhaps, based on personal habits, sexual habits, or latent venereal infection which explains the higher incidence of deaths from sepsis in the negro?

One would expect a higher incidence of deaths from hemorrhage in cases delivered by midwives than in those delivered by physicians. Physicians understand better the technique of uterine massage, they have ergot and pituitrin and they can resort to the intrauterine pack. Midwives deliver a larger proportion of negroes than whites, and multiparity with its higher incidence of postpartum hemorrhage is greater in negroes than in whites.

The facts revealed in the survey, however, do not support the expectation. There were studied 39 deaths from hemorrhage exclusive of that from abortion and ectopic pregnancy. Of these, 20 were of the postpartum variety. Phy-



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From the eastern seaboard three years ago and a little later from the West and Midwest came this suggestion from obstetricians: the desirability of a diagonal pull, in addition to the straight around attachments, in a garment designed to support the abdominal walls without disturbing the relationship of the fetus to the pelvis. To effect this abdominal support, and at the same time to provide proper back support, was a task involving considerable difficulties. However, approximately twelve months later—after numerous conferences, many adjustments and trial by various pregnant patients—a new series of prenatal supports was completed, prenatal supports with a diagonal pull, proved by X-ray to support properly the abdominal walls without constriction at any point.

A comparable situation arose with a number of different internists. The desirability of a garment to fit snugly—without discomfort— over thin, protruding hip bones and yet to hold the abdominal organs as high as possible, was obvious from requests by physicians who had prescribed and found wanting in these respects many visceroptosis garments. To provide such a garment involved the manufacture of a specially made material pliable enough to fit like a hood over the crest of the ilium and sufficiently firm to support the abdominal organs. Only after two years of collaboration and painstaking investigation was there ready for distribution a series of such garments.

Thus is the designing room at the Camp factory a veritable melting pot of professional desires and design possibilities. This is why Camp supports are scientifically designed.

sicians alone were in attendance upon 37, 15 of which were caused by postpartum bleeding, while there were only seven deaths from hemorrhage of all types in cases attended by midwives relieved by physicians. One is led to wonder if surgical interference, or the use of pituitrin to hasten delivery was the determining factor in the markedly higher incidence of fatal hemorrhage in the cases delivered by physicians.

(To be Continued)

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THE SANATORIUM is a private institution with 150 beds, located in the Ginter park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

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THE BUILDINGS are lighted by electricity, heated by hot water, and are well equipped with baths.

THE SCOPE of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Five physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

SYSTEMATIZED out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

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THE RELATION OF NUTRITIONAL DEFICIENCIES TO THE DEVELOPMENT OF HEART FAILURE IN ORGANIC HEART DISEASE

By
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Medical College of Virginia,
Richmond, Virginia

When failure ensues in chronic heart disease, it is obligatory that one ascertain the determinant forces which have operated in upsetting the stability of the previously existing compensatory mechanisms.

To merely note the existence of a chronic valve disease, hypertension, arteriosclerosis, or cardiac enlargement is manifestly inadequate, for these had existed probably for many years, during which time heart failure was not an associated syndrome.

A more comprehensive approach to the problem must be concerned with the physiologic efficiency of the myocardium which manifestly involves a consideration of those factors that may lessen the essential elements necessary for the maintenance of an optimal degree of heart muscle fitness.

In the final analysis heart failure ensues, (a) when the nutritive supply to the muscle fibres is not sufficient to meet the metabolic needs for adequate energy production; (b) when the quantity of muscle tissue is reduced by disease below that level sufficient for the work load; and (c) when the myocardium, because of hypertrophy and other biological changes in the muscle fibre, is unable to effectively utilize an amount of material sufficient for energy requirement.

Address as invited guest before the South Carolina Medical Association, Greenville, S. C., April 23, 1936.

Illustrative of this concept one may recall two problems in cardiology observed frequently in medical practice. First (a), is the patient who develops rapidly a fatal degree of heart failure following an occlusion of a major branch of a coronary artery. In such an event the absolute work load is suddenly lessened because of the marked reduction in the peripheral blood pressure from a previously high level, nevertheless heart failure promptly ensues because of the sudden reduction in the effective heart muscle tissue. Second (b), is the patient who has a persistent and excessively elevated systolic and diastolic blood pressure, and who finally develops progressive heart failure, which is irreducible, and which ends in death. A study of the heart at the necropsy shows a greatly increased muscle mass, but no evidence of disease unless hypertrophy of the muscle fibres be so interpreted. Judging by a commonly accepted standard, one concludes that the coronary vessels were normal and adequate to meet the nutritional needs of the heart muscle. However, it must be remembered that the hypertrophied heart requires an increased blood supply in direct ratio to its increase in surface area, and the chemical exchange in an hypertrophied muscle fibre is handicapped by the increase in the distance chemical substances must travel from the capillary wall to the center of the muscle cell. Hence, the conclusion that the coronary blood supply is adequate is subject to valid criticism. The coronary vessels would have supplied a sufficient blood volume for a heart muscle normal in cubic area, but they were inadequate for the greatly increased muscle area. The problem is one of relative coronary insufficiency, for the available nutrition was not sufficient to

meet the demands of the greatly increased energy requirements.

It is evident that heart failure is not contingent upon an increase above the theoretical normal base line of heart work (strain), but rather upon the relationship of work load and the physiologic efficiency of the myocardium.

The nutrition of the heart muscle, like that of all tissues in the body, is dependent upon the substances brought to it by the blood, and it is necessary not only that a normal volume of blood circulate around the tissue cells, but also that its quality be normal. If the quality is impaired, the circulating volume must be increased, or, if the volume is reduced, the concentration of important elements must be raised lest cell metabolism suffer.

There have been available for many years data on the bio-chemistry of muscle physiology which is immediately concerned with the function of the myocardium and conversely with development of heart failure.

The physiologic integrity of the heart muscle is dependent upon glucose, insulin and oxygen, and there exists an obligatory interdependency between these elements.

Briefly stated these data are: an adequate supply of oxygen must be available at all times since the conversion of glucose to glycogen in the heart muscle is dependent not only on insulin but also upon a free oxygen supply. The energy for muscle contraction comes from the breaking down of phosphagen but the energy for the resynthesizing of phosphagen is derived from the breaking down of glycogen to lactic acid. The lactic acid is reconverted into glucose and the glucose, under the influence of oxygen and insulin, reconverted into glycogen. Thus, continued heart muscle contraction may be interrupted by lack of phosphagen, or depletion of muscle glycogen, and these deficiencies in turn result from failure in adequate supplies of oxygen and insulin.

The more recent studies on muscle physiology have supplied additional data indicating the importance of an adequate supply of mineral salts, and it is to be anticipated that shortly experimental evidence will be available confirming the convincing clinical data which will demonstrate the fundamental importance of specific organic substances, particularly complete proteins and some of the well known vitamins. It has been shown both clinically and experimentally that, with a reduction in the coronary blood flow, it is obligatory that the concentration of glucose in the blood be raised if a normal muscle glycogen is to be maintained. It is highly probable that this is equally true of all other substances essential to muscle physiology.

In judging the importance of food deficiencies as related to heart failure, two questions are immediately presented for consideration. These are: (a) Is the normal heart so affected in avitaminosis that its functional integrity is impaired to the degree that heart failure develops; and (b), is the diseased heart affected by sub-clinical types of the deficiency diseases to the degree that heart failure prematurely ensues?

a. The first can be answered in the affirmative for it is well known that in beriberi, a disease which is primarily the result of vitamin B1 deficiency, there occur in the myocardium definite changes consisting of hydropic degeneration of the muscle fibers and intercellular edema.

Clinical observation reveals varying degrees of cardiac dilatation and failure with the usual cardinal signs of heart failure of the congestive type, with increased venous pressure, an enlarged and tender liver, and edema. Relief is promptly obtained from bed rest and a diet rich in vitamin B1.

b. In the consideration of the second proposition, the answer is of necessity subject to reservations. The evaluation of the importance of subclinical deficiency diseases in solving the problem of the bizarre and unexpected behavior of chronic disease is fraught with many pitfalls. Nevertheless, the problem becomes much simpler when one appreciates the fact that deficiencies in the elements essential to optimal nutrition rarely exist as a single deficiency; but, rather as a group deficiency with merely a preponderance of the clinical characteristics of one essential factor.

The importance of the full appreciation of this truth is obvious for one is rarely able to find a dietetic history indicating a complete lack of any one single essential food; but, rather, an

inadequate amount of many with a significant deficiency of one factor predominating.

There have been selected from our records patients who appear to warrant the conclusion that there operated in them, in precipitating heart failure, a factor which was reducible and which was probably nutritional in character.

Case I: J. P. Diet deficient in complete proteins, protective foods, and in total calories.

A negro man, 70 years old (age uncertain), entered the hospital on October 4, 1935. The history was vague but it indicated that the patient had become increasingly breathless over a period of several weeks and that for the past three weeks edema had increased rapidly, and was at the time of admission very extensive.

Examination showed an elderly man who was manifestly malnourished showing extensive general edema with ascites and moderate effusion in both pleural cavities. The patient was markedly breathless, there was extreme distension of the neck veins, and the liver was tender and 7 cm. below the costal margin. The heart was greatly enlarged, the left border extending out to the anterior axillary line in the sixth interspace and was approximately 13 cm. from the mid sternal line. The first sound was lacking in muscle quality and there was a suggestive mid diastolic gallop; there were no murmurs. The rhythm was interrupted by an occasional ventricular extrasystole. The aortic and pulmonic second sounds were equal and moderately increased in intensity and amphoric in quality. The blood pressure was 140/100. The peripheral vessels showed a moderate amount of arteriosclerosis, not unusual for the patient's age. The lungs showed dullness over both bases posteriorly and the physical findings of congestion indicated by heart failure rales. The breath sounds were distant over the lung margins suggesting a moderate amount of pleural effusion. There was wide spread body edema extending up to the clavicle, and the phenomena of a moderate amount of ascitic fluid.

Laboratory Data: Blood chemical studies revealed a non-protein nitrogen of 41 mg., total protein 5.3 per cent; albumin 3.7 per cent; and globulin 1.6 per cent. Uninalysis: heavy trace of albumin, specific gravity 1.020, no casts, blood or pus. Blood count: Hemoglobin 71 per cent; 3,800,000 red cells, 7,900 white cells; 65 per cent polys.

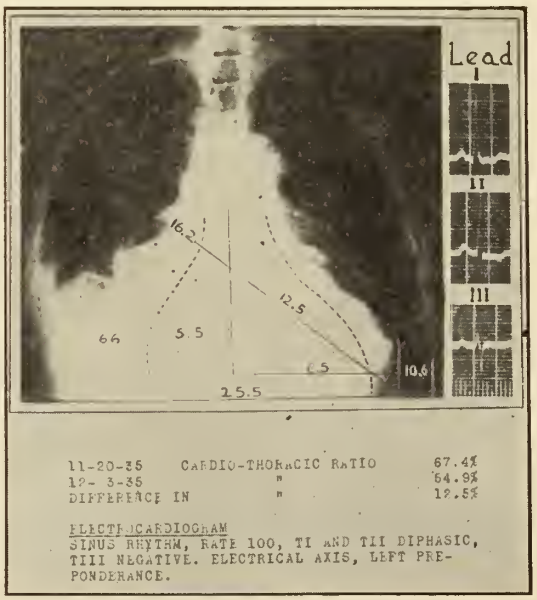
Admission Diagnosis:

1. cardiac hypertrophy and dilatation
2. arteriosclerosis
3. myocardial fibrosis secondary to coronary insufficiency
4. beriberi heart (subclinical avitaminosis B1)?

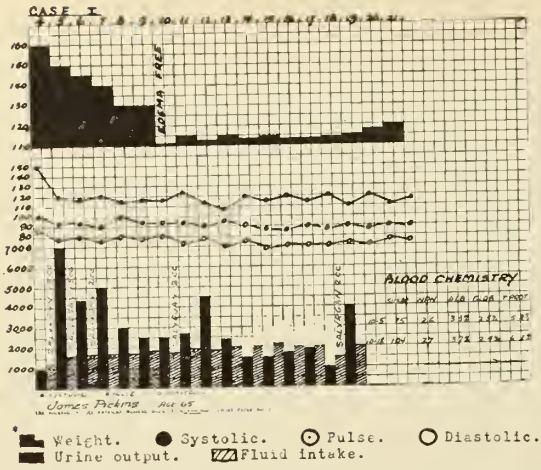
Clinical Course: Because of the tremendous amount of edema, it was thought advisable to place the patient on mercurial diuretics. He was given salyrgan on three successive days, 1 cc., 1 1/2 cc. and 2 cc. Within a period of four days he lost 45 pounds in weight. Following salyrgan therapy the patient was placed on digitalis and a high caloric diet, rich in proteins and water soluble vitamins. His clinical improvement was dramatic and the patient left the hospital symptom free. (Chart I, Plate I).

Since leaving the hospital, the patient has been seen at regulated intervals and he has remained free from symptoms although the heart remains moderately enlarged in spite of a normal blood pressure.

It is perfectly evident that the patient had structural disease in the cardio-vascular systems, yet, the marked change in cardiac size and rapid and sustained clinical improvement



*Dotted line indicates reduced heart size superimposed on the original teleroentgenogram.



strongly suggest that sub-clinical beriberi precipitated congestive heart failure. A survey of the patient's dietetic history prior to entering the hospital clearly indicates that he had been living for a prolonged time on a diet which was insufficient in calories, practically free from water soluble vitamins, and very low in complete proteins.

Case II: A. C. Pregnancy, toxemia with hypertension; injudicious dietetic restrictions.

Aged 42, admitted on July 8, 1932, from the Out-Patient Clinic because of toxemia of pregnancy.

At the time of admission she was suffering with marked breathlessness, so severe that she had to remain in an upright position. For the past few weeks before entering the hospital, she had noticed some edema of the lower extremities and breathlessness which had progressively increased in intensity. The patient was the mother of four normal children and, as far as she knew, there had been no complications during the former pregnancies.

Upon admission to the hospital she was seen by the members of the Department of Medicine who made the following note. "It is apparent that the patient is suffering from a marked degree of heart failure for the lungs show moist rales in the bases, the neck veins are markedly distended even in the sitting posture, and the edge of the liver is felt 4 cm. below the costal margin and is tender. There is edema of the lower extremities and the abdominal wall up to the costal margin. The heart shows the apex beat in the anterior axillary line in the sixth interspace, but the impression is that the enlargement is due mainly to dilatation. The first cardiac sounds are lacking in muscular quality, there is a blowing systolic murmur at the apex which is not transmitted, and there is a definite mid diastolic gallop heard just to the right of the apex beat. The aortic and pulmonic second sounds are both markedly accentuated. The peripheral vessels are essentially normal in character, the blood pressure is 182/100, and the pulse rate is 128 and regular. There is a suggestion of pulsus alternans. The fundi showed marked edema of the disc margins, small spastic arteries, and two fresh hemorrhages."

The electrocardiogram showed a pulse rate of 125 and iso-electric T waves in Leads I and II, an enlarged notched P wave in Lead II, and a left axis deviation.

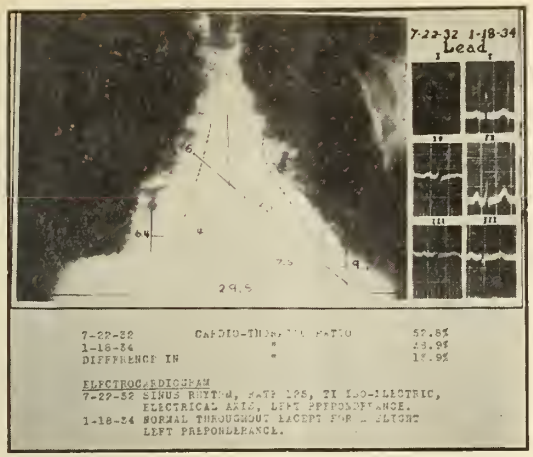
The diagnosis at the time of the medical consultation was as follows:

1. Hypertension, chronic
2. Moderate degree of arteriosclerosis
3. Cardiac hypertrophy and dilatation
4. Congestive heart failure, extreme
5. Probable coronary arteriosclerosis with coronary insufficiency.

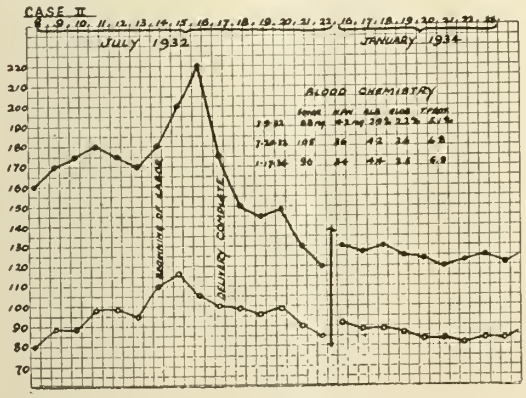
Courses in the hospital: The pregnancy was interrupted by the Obstetrical Department and, after a stay of twenty-seven days in the hospital, the patient left apparently in an approximately normal physical condition.

The patient returned to the hospital on January 16, 1934, eighteen months later, on account of the fact that she had again become pregnant. At this time she was re-examined and the records show that her blood pressure was normal. The electrocardiogram was completely changed, being entirely normal except for a slightly prolongated S III suggesting slight left axis deviation, and the x-ray of her heart showed this to be not enlarged, but subnormal in size. (Chart II, Plate II).

The factors operating in the precipitation of the serious degree of heart failure observed in this patient were of a necessity reducible for the reason that complete recovery occurred. The first abnormal physical findings noted in



*Dotted line indicates reduced heart size superimposed on the original teleroentgenogram.



* ● Systolic O Diastolic

this patient were hypertension and albumin in the urine. These findings prompted restrictions in the patient's dietetic regime. This may have resulted in a subclinical deficiency disease which, in combination with pregnancy, hypertension and a moderate degree of coronary insufficiency (age 42) conceivably precipitated the acute cardiac episode. This appears reasonable when one notes the restoration to normalcy following the reduction in blood pressure, delivery and resumption of a normal diet.

Case III: G. A. J.

White male, aged 65, was admitted on November 18, 1932, and discharged on December 15, 1932.

Chief complaint: Breathlessness and swelling of the feet and legs.

He stated that for the past few years effort had induced breathlessness, but that the breathlessness had gradually increased in intensity up to six weeks ago, at which time it became so severe that it was necessary for him to remain in bed propped up on a back rest. In addition to these symptoms he had been having for the past three or four week difficulty in voiding, and recently he had been getting up from eight to ten times every night in an effort to empty his bladder. Otherwise, his history was not significant.

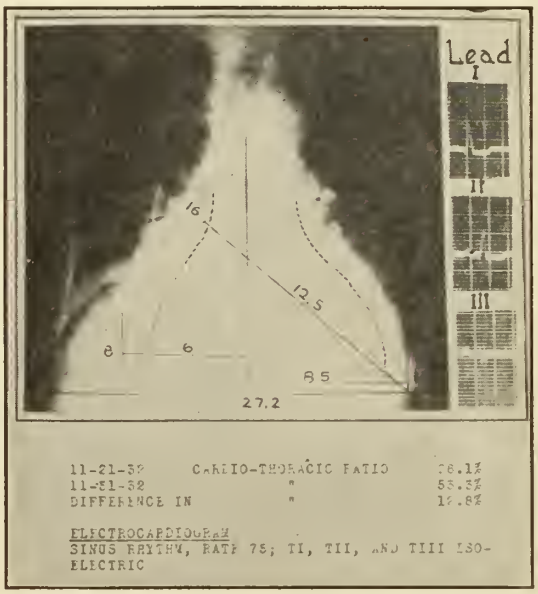
Physical Examination: The patient was orthopneic and coughed frequently. The neck veins were markedly distended. The lungs were hyper-resonant to percussion both anteriorly and posteriorly except over the bases where the percussion was slightly dull, and there were moist rales over the chest both anteriorly and posteriorly extending as high as the third rib. The cardiac apex was in the sixth interspace and extended out to the anterior axillary line; the left border was approximately 13 cm. from the mid sternal line. Auscultation: there were no murmurs; the first cardiac sound was distant, but there was no gallop rhythm; both aortic and pulmonic second sounds were slightly increased in intensity and were amphoric in quality. The pulse rate was 76 to the minute, and regular. The peripheral arteries showed a moderate degree of thickening and the blood pressure was 135/75. The abdomen was distended, apparently containing a considerable amount of ascitic fluid and the liver was enlarged 7 cm. below the costal margin and was slightly tender. There was marked edema of the lower extremities extending up above the crest of the ilium. The bladder was easily palpated above the pubic bone and 550 cc. of urine were obtained with the catheter.

Diagnosis:

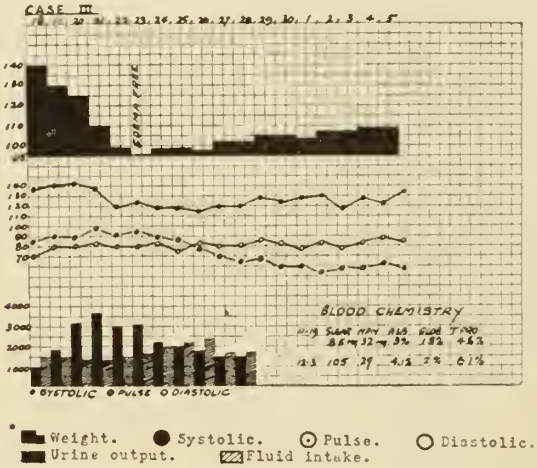
1. Cardiac hypertrophy and dilatation
2. Arteriosclerosis
3. Prostatic hypertrophy
4. Congestive heart failure

Course in the hospital: The patient was placed in bed, limited in diet and fluid intake and given adequate doses of digitalis. It is significant that his weight began to decrease and the edema to disappear almost immediately after the beginning of bed rest, and before

the effects of digitalis could have influenced the clinical course of the patient. After reduction of edema, the patient was put on a general diet and left the hospital apparently entirely relieved of all cardio-vascular symptoms. The heart had reduced to approximately a normal size. (Chart III, Plate III).



*Dotted line indicates reduced heart size superimposed on the original teleroentgenogram.



In the absence of infection, an increase in blood pressure, a coronary occlusion, or a disturbance of cardiac mechanism, one is forced to conclude that some factor, probably nutritional, was operating in the precipitation of heart failure. The very prompt response to therapy, and particularly the marked reduction in cardiac size are similar to the clinical behavior of the beriberi heart. The dietetic history was not conclusive, but it indicated a marked preference for bread, fats and sweets.

Discussion:

In the general consideration of the problem of nutritional deficiencies as related to heart failure in organic heart disease,certain fundamental facts exist which are relevant. Severe degrees of avitaminosis can and do produce fatal degrees of heart failure in young and previously healthy individuals. This is illustrated by the heart failure seen in beriberi B1 avitaminosis.

When a heart is altered by disease its nutritional needs are increased and its cellular metabolism is slowed down due to increase in surface area of the muscle fibres incident to hypertrophy and dilatation. It is readily conceivable, therefore, that subclinical degrees of nutritional deficiencies may alter the physiologic "fitness" of the myocardium to the end that congestive failure ensues. It is difficult to incriminate specific food factors, but our feeling is that deficiency in the water soluble vitamins and complete proteins, meat, eggs and milk are the most important elements concerned.

The cases here presented strongly indicate the importance of nutritional factors operating in association with organic heart disease in precipitating, prematurely, heart failure. It is doubtful if either factor was sufficiently severe to independently disturb the developed compensatory mechanism, yet, occurring together, serious consequences resulted.

The age of the patients and the physical data suggest that varying degrees of coronary insufficiency existed in these patients.

It is suggested that such patients are peculiarly liable to the serious consequences of subclinical deficiency diseases for, with a reduction in the coronary blood flow, it is obligatory that the concentration of all essential elements be increased lest cell metabolism suffer.

It has been said that the fate of a people rests upon an adequate food supply. It is equally certain that the future health of the patient with organic heart disease is definitely influenced by his ability to obtain, ingest and utilize a balanced diet in optimal quantities.

A STUDY OF HOOKWORM DISEASE

By
G. R. O'DANIEL, M.D.,
Hartsville, S. C.

In the years 1932 and 1933 the writer made stool examinations on 1,425 persons in Dorchester County. These examinations were in the majority of instances made on persons who gave a history of ground itch. Out of the total number of examinations made, four hundred and thirty-six (436), or thirty and five-tenths per cent, were found to be positive for hookworm disease. I might say that a few of these examinations were re-examinations following treatment. A total of twenty-eight, or slightly less than 2 per cent, were found to have ascaris infection.

Several years ago Doctor Charles W. Stiles, an international authority on hookworm disease, challenged a statement of the Rockefeller Foundation that hookworm disease was no longer a health problem in the Southern States. The writer corresponded with Doctor Stiles and told him that he thoroughly agreed with him in his views.

Hookworm disease is a sadly neglected disease in the South. The Rockefeller Foundation some years ago put on an intensive hookworm campaign in the Southern States, and although the results of this campaign were far-reaching, the disease continues to be a real public health problem in certain portions of the South.

This study revealed that hookworm disease is much more prevalent in the white than in the colored race. It is unusual to obtain a history of severe ground itch in a negro. Heavy infections with hookworms are common in the white race but rare in the colored race based on our findings. It appears from our study that hookworm disease is more prevalent in half-breeds or mulattoes than in the pure negro.

It is unlikely that a heavy hookworm infection would be difficult to diagnose in a locality where the disease is prevalent. However, the disease may simulate a number of other conditions very closely. Uncinariasis may produce a generalized edema, giving the patient somewhat the clinical picture of cardio-renal disease. The patient often has marked dyspnoea, and this symptom, along with edema, may at first sight lead the physician to make a snapshot diagnosis of heart or kidney disease. However, on closer examination, the profound pallor that usually accompanies a heavy hookworm infection should at once suggest a stool examination.

A systolic murmur that some times results from uncinariasis may sometimes be confusing to the physician. This murmur is haemic, and is the result of anaemia. Any anaemia which is unexplained should always have hookworm disease ruled out a causative factor. I know of very few conditions that will produce the profound pallor found in hookworm disease.

Whenever a differential blood count reveals an eosinophilia, a stool examination is indicated. Several years ago I had occasion to examine a patient with an acute abdomen and I made a blood count to rule out appendicitis. This patient had an eosinophilia of twelve per cent, so I immediately advised a stool examination. The stool was positive for hookworm ova. Of course, the acute abdomen bore no relationship to the hookworm infection most likely, but I merely cite this case to illustrate the value of a blood count in diagnosing intestinal parasites.

One of the children examined in this series, although only four or five years old, had a general anasarca and resembled a severe cardio-renal case. However, her profound anemia at once suggested a stool examination. The stool examination revealed hookworm disease.

A man past fifty years old came into my office who had been treated for hookworm disease eight years previously. A stool examination was positive for hookworm disease. He stated that he had continued to go barefooted since receiving treatment eight years previously. Some weeks later he came into my office and stated that he had been passing blood in his stools. He was extremely weak and complained of pain in his epigastrium and this discomfort increased after eating. He complained of constipation as well as flatulence. A physical examination revealed a generalized tenderness over the entire abdomen, but the tenderness was most pronounced over the epigastrium. The patient was very much underweight. In view of his age, underweight, gastric symptoms, and the passage of blood in the stools I was under the impression that he had either a gastric carcinoma or a gas-

tric ulcer. Stool examination revealed a stool of tarry appearance. Microscopic examination of the stool revealed that the patient still had a rather heavy hookworm infection which, in my opinion, may have accounted for all the symptoms of which he complained.

I have examined a number of patients who stated that they had received treatment for hookworms in the past. A number of these patients were found to still have hookworm infection. Some may argue, and rightfully, that an added infection has been gotten since the person was last treated, but judging from my experience this will often only partially account for the present infection. Many of these patients were doubtless never completely ridded of their original infection.

There are three things to be sought for in properly eradicating hookworm disease. First, rid the patient of the parasite; second, educate him to wear shoes; and third teach him a proper method of sewage disposal. Eradication of the disease is largely a matter of education.

I have had two patients with heavy hookworm infection who had marked choreic manifestations. This manifested itself by a twitching of the eyes and face at frequent intervals. One of these patients ceased to have symptoms of chorea after receiving hookworm treatment. I was unable to follow up the other patient.

I know of two patients who were advised by their physician to have laparatomies but on the advice of other physicians stool examinations were made. The treatment for hookworms saved these patients from useless operations.

A stool examination is a very simple procedure, and every patient who comes into your office is entitled to this examination. The method I use is the brine flotation method. A small portion of feces is mixed with concentrated salt solution and allowed to stand for thirty minutes. Let me stress the fact that thirty minutes seems to be the ideal length of time to allow the mixture to stand before being examined. If the solution is allowed to stand for a greater length of time either all or part of the ova may disappear. I have examined stools that were heavily infected on examination made at the end of one-half hour, and on further examination some time later have found it most difficult to find any ova whatsoever. This results from a difference in osmotic pressure, with the result that the eggs rupture. A small wire loop made from ordinary screen wire is used to loop off several drops of the upper portion of the stool on a glass slide for microscopic examination. Authorities tell us that the severity of the symptoms of hookworm disease does not seem to always depend upon the number of hookworms. Only ten or twelve hookworms have been found in patients who died of the disease. However a patient has been known to recover after more than four thousand (4000) hookworms were expelled. Any hookworm infection regardless of its severity should be treated adequately. Slightly infected cases should be treated not only to rid the patients themselves of the disease, but the cases should also be treated from a public health standpoint.

On one occasion I examined about fifty (50) patients and found only one slightly positive. Previous to that time I had been finding about thirty-three and one-third per cent to fifty per cent of those giving a history of ground itch positive for hookworm ova. Searching for a cause, found that I had recently made up some saline solution with iodized salt. By running controls both with iodized salt and plain salt solutions, I found that iodized salt completely destroys hookworm ova. After talking with several pathologists I found that I had not made any new discovery, but that this fact was already known to them. Several persons have suggested to me that possibly iodine might be used therapeutically in hookworm disease. My reply to them was that hookworm ova are not hatched in the human intestine. Therefore, ridding the person of hookworm ova would not rid them of the hookworm itself.

I know of no disease in which the results of treatment are more outstanding. The gratitude of the patient and the marked difference in his physical appearance and well being are a joy to the physician who has treated the case.

Authorities tell us that the eggs vary in number and that the stools may be negative one day and contain many ova a few days later. Therefore, one examination does not mean that the patient does not have hookworm infection.

I wish to stress the fact that we should not

forget that adults may have hookworm disease. I have seen some very heavily infected adults. Many adults in the rural sections go barefooted in the summer months. We should remember that it is a mistaken idea that only children have hookworm infection.

My experience in treating hookworm disease at the time of this study several years ago was confined purely to the use of Oil of Chenopodium. No serious ill effects were noticed as a result of treatment. Recent literature on the subject leads me to believe that hexylresorcinal would probably be a more effective means of treatment.

In conclusion, let me urge that stool examinations be done routinely on every patient. Let me impress on you also that no case should be dimissed as cured until several subsequent stool examinations have proved negative.

THE AMMONIACAL DIAPER

By
D. O. RHAME, JR., M.D.,
Clinton, S. C.

The Ammoniacal Diaper is a clinical entity frequently encountered by pediatricians. The diagnosis is simple, the odor of ammonia being always present to a more or less degree, depending on the concentration. The clinical significance of the ammoniacal diaper lies in the skin irritation which it causes. It is naturally a problem confined to the diaper wearing period and this sets the age as two years and under. According to statistics the condition is severest between the ages of one and two years.

The lesions consist of inflamed cutaneous areas in the region in contact with the diaper, namely, the inner thighs, genitals, buttocks and lower abdomen. Sometimes there is a diffuse redness of the whole diaper region. The characteristic lesions are blebs and vescicles. There may be one at the end of the prepuce; rarely the whole diaper region may show confluent blisters. No vesication is seen, but frequently after the congestion, the whole epidermis becomes hard and cracked and the crest of dead flaky skin finally desquamates.

Frequently in boys a blister develops at the meatus of the penis and subsequently ruptures, causing superficial ulceration, which, in turn, causes difficulty of urination and possibly hemorrhage. A crust forms over the ulcer and may partially occlude the urethral opening, and the passage of urine removes the crust time after time and irritates the ulcer, causing the healing to take weeks sometimes.

The lesions appear in the morning when the baby has lain wet for a long period during the night. The trouble is confined to those infants who wet the diaper. The irritating urine may initiate patches of eczema in the region which are very difficult to get rid of unless the urinary condition is relieved.

The onset is abrupt and the course irregular. It may last one day if mild or may last for weeks.

A typical illustrative case will illustrate:

"B. C.—a boy, age 4, has nocturnal enuresis. The mother has observed a very strong odor of ammonia. This morning she saw blood stains on the sheets, which alarmed her. Examination revealed the glans penis congested, and an ulcer covered by a crust at the meatus."

ETIOLOGY

Ammonia to noticeable mounts occurs at times in the urine of nearly all babies. Most of the cases occur in the winter months. The condition is almost confined to artifically fed infants, seen especially at the time of beginning solid food. According to the histories of a number of cases, the following diets were incidental to the ammonuria:

Cows milk with cereal
Large quantities of bread
Egg occasionally
Orange juice
High fat percentages in young infants
Buttermilk, whole milk, condensed milk.

Most of the children were constipated; frequently stools were normal.

Giving alkali did not give relief and sometimes aggravated.

The following facts were found by Dr. Zahorsky in some extensive work on the subject with many babies. As a rule the concentration of ammonia in infants is not high, yet those with digestive disturbances show a higher percentage of ammonia nitrogen in the urine. The ammonia nitrogen in children is relatively higher than in infants. Sometimes high figures are obtained with no apparent cause. On examin-

ing children with the symptoms of ammonuria their urine contained no more ammonia—even though high—than in many children who had no symptoms. In general high ammonia content is found with a high specific gravity. Nearly all the children showed the ammonia nitrogen higher in the morning after the night's rest.

A few words on the ammonia mechanism may help at this point. Normal urine contains urea nitrogen to the extent of 85-90 per cent of the total nitrogen and a small amount of ammonia combined with hydrochloric, phosphoric and sulphuric acids amounting to 4-5 per cent of total nitrogen. The nitrogen of the body is derived from the proteins, which are broken down in the gastro-intestinal tract to form amino acids. These amino acids are absorbed from the small intestine and undergo deamination in the liver. The ammonia thus liberated is available for union with acid radicles. Ordinarily most of the ammonia is transformed into urea, and only a small amount unites with the acid radicles to form ammonium salts which are excreted in the urine. However, when acids are present in excess, either from ingestion of mineral acids or from abnormal production of acids in the body (as diacetic and oxybutyric in diabetes mellitus) ammonia combines with them and is so excreted, the urea of the urine being correspondingly decreased. This is a part of the body's mechanism of protection against acid intoxication. Ammonia salts are not, however, increased in all forms of acidosis—notably that of nephritis. In diabetes mellitus and other hyper productions of acid, the output of ammonia salts is an index of the degree of acidosis. Normally the ammonia in great part unites with weak carbonic acid to form ammonium carbonate, which is dehydrated to form urea. Thus according to Abt, there is a striking relationship between the urea and ammonia of urine. Marked increase of ammonia is reflected in a decrease of urea. Both are derived from the nitrogen of proteins. Depending on conditions, more or less nitrogen is excreted as urea or ammonia.

Keller was first to call attention to the increase of ammonia in severe gastro intestinal disorders of infants. Hereby the total amount as well as the ammonia coefficient was increased. Czerny and Keller found that diet exercised a definite effect on the ammonia excretion and it was especially the fat which affected it. Folin found that the ammonia increased on low protein diet. In normal infants the ammonia coefficient rarely exceeds 10 per cent (Mayer). In two cases of fasting the ammonia coefficient rose from 3 per cent and 7.6 per cent the first day to 26 per cent and 25 per cent the third day respectively. Hoobler's experiments showed a definite ammonia increase on high fat feeding.

Recently Nash and Benedict, later verified by Loeb, Atchley and Benedict, have suggested that ammonia is manufactured by the renal cells themselves, in amounts which will depend on the blood reaction. In acidemia more is made and in alkalemia less. In any case the acids in the blood stand as the direct reason for increased ammonia in urine.

Another cause of ammonia in urine, outside the metabolic system, is bacterial decomposition of the urea in neglected cystitis, where the urine stands a while—especially that due to paralysis or obstruction—resulting in formation of ammonia. Ammonia is also increased in conditions in which the power to synthesize urea in the liver is interfered with. Inorganic acid ingestion will increase the ammonia of urine. The ammonia referred to means ammonium salts and not free ammonia.

Now we have seen that ammonia combined with acids is excreted to a more or less degree in nearly all infants' urine, yet it has been found that free ammonia, and not combined, causes the skin irritation in babies. No ammonia in its free state has been proven present in a child's urine. Dr. Zahorsky, on following up this clue, found that the immediate cause of the ammoniacal diaper is the presence of an alkali in the diaper or bedding. When the diaper is not thoroughly rinsed in clear water after being washed in strong alkaline soap, enough alkalinity remains in the cloth to decompose the ammonia in the urine. An alkaline stool mixed with the urine acts in the same way, causing the irritation to be blamed on the feces, when really caused by free ammonia. Thus it is also seen that a neutral urine can be the most dangerous, since highly acid urine would neutralize all the alkali in the cloth before the ammonium salts would decompose. This explains the failure

of dieting and the administration of alkalis. The treatment would be, first of all, strict attention to the washing of the diapers to be sure no alkali remains.

CONCLUSIONS

1. The severe irritation from babies' diapers is the result of free ammonia in these diapers.

2. The free ammonia does not occur as such in the urine but is derived from the ammonium compounds, and is released by alkali in the diaper; soap, lye, stool or lime.

3. The amount of combined ammonia in the urine depends on the amount of inorganic acid thrown into the blood.

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REPORT OF SPIDER BITE

By
H. L. SHAW, M.D.,
Sumter, S. C.

At 3:30 P. M. on Sunday afternoon May 17, 1936, I was called to see a young negro man, 20 years old, who gave the following history: "While in the privey which is located in the yard I was bitten and am suffering severely."

Upon examination I found evidence that he had been bitten on the scrotum. Four spiders were afterwards found (probably black widow), but only one bit him. He was suffering intense pain in his legs, arms, abdomen and chest. The pains were cramp like, the muscles were hard and rigid. There seemed to be no let up in the contraction of the muscles. There was some difficulty in respiration. His pulse was the least bit slow, I did not count it accurately, however, it seemed slower than normal. It was with difficulty that the patient could be kept on the bed, he was suffering so intensely, begging that something be done for him and begging that he be rubbed. The pain seemed worse in the legs than elsewhere, particularly in the thighs.

As soon as possible I came back to my office, boiled up a syringe securing an ampule of 15 1-2 grains of calcium chloride, I returned and gave this intravenously. Before finishing the administration the patient remarked, "Doctor, I am better." I left him to return in two hours and a half and found him suffering if anything worse than before. I then gave him one half grain of morphine hypodermically. Two hours later I returned and gave him 20 cc of a 10 per cent solution of sulphate of magnesium in the gluteal muscle. This should have been given intravenously but I could not secure, either from the hospital or the drug store, the intravenous medication.

This was given at 9 P. M., I did not see the patient again until 11 o'clock the next morning. He had a good night's rest and I found him free from pain and apparently well again.

I got my authority for giving the magnesium in an article which was printed in May 18, 1935, issue of The Journal American Medical Association, said article was entitled, "Black Spider Bite" written by J. M. Frawley, M.D., and H. M. Ginsburg, M.D., Fresno, California.

ABORTION, Spontaneous and Induced, Medical and Social Aspects. By Frederick J. Taussig, M.D., F.A.C.S., Professor of Clinical Obstetrics and Clinical Gynecology, Washington University School of Medicine, St. Louis. Illustrated. This Volume is one of a Series Dealing with Medical Aspects of Human Fertility, Sponsored by The National Committee on Maternal Health, Inc. St. Louis, The C. V. Mosby Company, 1936.

This volume is one of a series dealing with medical aspects of human fertility sponsored by the National Committee on Maternal Health, Inc. The author well says that abortion has become a world problem. This means that it goes far beyond purely medical and surgical bounds. He has had unusual training for his investigation of the subject. This investigation has been exhaustive going back into the remote period of history. Not only does he discuss abortion in the human being but makes a study of abortion in animals. The illustrations are unusually good and they are numerous. The preventive side of the subject has been given careful consideration. The bibliography is extensive. Indeed this monograph is a classic.

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JUNE, 1936

BACK TO THE PHARMACOPOEIA AND THE NATIONAL FORMULARY

The Journal is interested in promoting a larger use of the Official Pharmacopoeia, Number 11, just off the press and approved for adoption on June 1. The Journal has a similar interest in the new revised edition of the National Formulary published by the American Pharmaceutical Association. Both of these books are reviewed in this issue of the Journal. We have conducted on our own account a survey in one of the smaller counties which appears to show that about fifty five per cent of prescriptions call for proprietaries and specialties. We have sought the cooperation of the School of Pharmacy of the Medical College of the State of South Carolina at Charleston and the School of Pharmacy of the University of South Carolina at Columbia. It gives us very keen pleasure to present herewith a brief summary of a recent survey conducted for us by the latter institution. A similar survey and summary will be presented in the next issue of the Journal as a result of a special investigation by the School of Pharmacy of the Medical College of the State of South Carolina. We have sought the interests of the component county medical societies. We hereby request the program committees to study some phase of this problem and to inaugurate an educational campaign amongst the membership. Great progress has come from the activities of many high class pharmaceutical manufacturers, and there are many so-called stock remedies of value, but the art of prescription writing should not become a lost art, as many believe to be imminent. It is gratifying that there is a wide spread effort now to consider seriously the whole problem. The American Medical Association has done much to this end by its various publications and particularly by the activities of the Bureau of Pharmacy and Chemistry. The American Association of Medical Colleges at its last meeting took up this subject and reported on a survey of the teaching now being carried on along these lines by their member institutions throughout the country. Fundamentally we shall probably have to depend largely for real progress on our teaching institutions, and it appears that they are going to do something about it. One of the recent outstanding exhibits was that of the Department of Pharmacy of the Medical Department of the University of Kansas at the meeting of the American Medical Association just held at Kansas City. This institution brought forward forcibly to the many thousands of physicians attending the convention the history of the development of the Pharmacopoeia and

the National Formulary and the many admirable features of the new revisions.

University of South Carolina,
Columbia, S. C., June 4th, 1936.
To the Editor Journal South Carolina Medical Association:

In compliance with your request of February 13th, I wish to give you the results of our Prescription Survey here in Columbia.

This work was done by members of our Senior Class in Prescription Practice and was under the supervision of Professor W. D. Stother, a member of our teaching staff. A total of about eight thousand prescriptions was read and they were taken from the files of three drug stores located in different sections of the City of Columbia. This was done in order to get a more general representation of prescription writing in the city. I might also add that the total number of prescriptions read was exclusive of any refills and all were written during the calendar year of 1935. The following results were obtained:

NOTE: The percentages are calculated on the number of different items prescribed and also on the number of times each was dispensed.

In the tabulation of this data, the stores selected will be designated as Nos. I, II, III. Store No. I draws its business from what might be called all classes of people. No. II might be considered a community type of store, while No. III is located in the down town section on Main Street.

Store	% of items U.S.P.	% of items N.F.	% of items Non-official
I	42.5	10	47.5
II	51.4	5.9	42.7
III	48.4	9	42.6
Average	47.5	8.3	44.2
Store	% times dispensed U.S.P.	% times dispensed N.F.	% times dispensed Non-official
I	67.8	3.8	28.4
II	63	6	31
III	70.9	9	22.2
Average	67.2	6.3	27.2

I am enclosing herewith a copy of the reprint of a Survey of somewhat similar nature made by Professor Strother in 1931, which I hope may be of interest.

Assuring you that it has been a pleasure for us to cooperate with you in this connection, and I sincerely hope that your effort to popularize the use of the U.S.P. and N.F. among the physicians of our state will be highly successful, I am,

Very sincerely yours,
E. T. Motley, Dean.
School of Pharmacy

RESOLUTIONS ON THE DEATH OF DR. S. E. HARMON

In Memoriam

Whereas, Doctor Samuel E. Harmon, beloved Surgeon and Physician, friend and counselor of our profession was taken from this world on December 28, 1935, and

Whereas, his cheerful, bright and useful life was a constant inspiration to all of our members, he being a kind and helpful friend, a broad and judicious counselor, and

Whereas, his untiring efforts and devotion to his profession endeared him to all who knew him, including many of our members and others who owe him a debt of gratitude for services of the highest skill which were rendered purely for his love of God and humanity, therefore be it

Resolved: By the members of District No. 3 South Carolina Graduate Nurses' Association, in meeting assembled that we deeply regret the death of this eminent surgeon and our esteemed friend; that in his death our association has lost a true friend and a valuable adviser; that we extend our sincere sympathy to his family, and be it further

Resolved: That these resolutions be spread upon the minutes of the Association and a copy thereof be sent to his family.

Mrs. Frank George, R.N.
Miss Pauline Pearce, R.N.
Miss Pearl Leitzey, R.N.
Committee on Resolutions South Carolina Graduate Nurses Association District No. 3.

SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

Some Observations on the Jameson Recession Operation for Strabismus. J. W. Jervey, Greenville—South. M. J. 29:520, May 1936. Jervey finds this operation the most desirable type, and reports 81 per cent successful results in a group of 21 cases.

A Tracheobronchial Suction Tube. W. B. McWhorter, Anderson—South. M. J. 28: 328, March 1936. Description of an instrument for removing secretions.

Atraumatic Removal of Needle from Hand under Fluoroscopic Control. W. H. Prioleau, Charleston—Ann. Surg. 103: 854, May 1936. An illustrated discussion of a technique for atraumatic removal of the needle.

Abnormal Growth from the Coccygeal Region of a Baby. W. P. Timmerman, Batesburg —South. Med. & Surg. 98: 199, April 1936. Case report of a large teratoma in caudal region of a newborn infant. Tumor removed, recovery uneventful. Pathological report listed at least nine types of tissue in the tumor.

Fate of Transplanted Cow's Horn. J. A. Siegling, Charleston, and J. J. Fahey—J. Bone & Joint Surg. 18: 439, April 1936. Results of animal experiment indicate that cow's horn is relatively non-absorbable and does not stimulate osteogenesis.

Observations on the Effect of Malaria on the Wassermann Reaction. R. Wilson, Jr. and S. L. Levin, Charleston—Am. J. M. Sc. 191: 696, May 1936. The authors reviewed 262 cases of malaria in Roper Hospital, and found that the Wassermann reaction was falsely positive (non-specific) in 6.3 per cent.

The Cold Pressor Test for Measuring the Reactibility of the Blood Pressure: Data Concerning 571 Normal and Hypertensive Subjects. E. A. Hines, Jr. and G. E. Brown, Rochester, Minn.—Am. Heart J. 11: 1, Jan. 1936. The technique of the test is discussed. The authors find that subjects with normal blood pressures fall into two groups, one with a normal response to the test, the other with an hyperactive response. The latter group is thought to furnish patients with essential hypertension, as indicated by observations on three cases watched through the several stages.

Hypertension —Cardiac Hypertrophy —Nephrosclerosis. F. E. Zemp, Columbia—South. Med. & Surg. 98: 202, April 1936. A complete discussion, including surgical treatment and considerable bibliography.

Studies on the Relation of Diet to Goiter. III. Further Observations on a Goitrogenic Diet. R. E. Remington and H. Levine, Charleston—J. Nutrition 11: 343, April 1936. Further experimental work with rats, in the search for an answer to the goiter problem.

OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., GREENVILLE, S. C.

Continuation of Comments on Report of Committee on Maternal Welfare presented before the House of Delegates, April 21, 1936, by Dr. R. E. Seibels, Chairman, Columbia, S. C. The first installment was published in the May issue.

The role of inadequate prenatal care in increasing maternal mortality has already been referred to. Only 5 women who died had anything like adequate prenatal care. Two of these died from sepsis, one after forceps delivery because of prolonged labor, and one after classical cesarean section after two vaginal examinations. These deaths then resulted from errors of technique, and theoretically at least prenatal examination should have put the doctor on his guard with respect to expected difficulty, and this should have governed his care in examination during labor.

In 224 cases there was little or no prenatal care. There were only 9 deaths from toxemia of late pregnancy in the group who received even a little prenatal care, this being one-third of the entire group, while there were 93 deaths from this cause in the group receiving no prenatal care, being the cause of practically one half the deaths in the group. This seems to demonstrate that even slight prenatal observation is not a negligible factor in the prevention of toxemic deaths.

On the other hand, this does not seem to apply to prevention of sepsis. Slightly over one-third of the deaths of women who had inadequate prenatal care were due to sepsis, while slightly more than one-fifth of the deaths in the group receiving no prenatal care died of infection. Again one may ask, is it possible that since physicians probably attended more of the women who had some prenatal care, than did midwives, was this a factor in the greater incidence of death from sepsis in this group? There is no disposition to indict, but we physicians must search out our faults and attempt to eradicate them, before our accusations against midwives will be seriously listened to.

Thirteen deaths occurred from hemorrhage because of placenta previa, all in the group who received no prenatal care. Adequate care would have included instruction as to the danger of bleeding during pregnancy, and especially painless bleeding during the last trimester. However, in studying the method of delivery in these thirteen women, one is led to doubt how much such instruction would have reduced the mortality. Eleven of these women were delivered by physicians, and one by a midwife relieved by a physician. Cesarean section was done once, and version 8 times. Braxton-Hicks version after rupture of the membranes is an acceptable method of treatment and from the maternal standpoint a rather satisfactory type of treatment for placenta previa, and perhaps, is the best method for a patient who can not be transported to a hospital, but it presupposes no manual efforts at extraction, but instead the continued presence of the physician, during the completion of labor by the natural forces. Whether or not this was the procedure followed in these 8 fatal cases is not known. Nor do we know how the other four cases were handled, except that delivery was not operative.

Although it should be generally recognized that eclampsia is not a surgical disease and that an eclamptic is in no condition to withstand surgical procedures, and although the dictum, treat the eclampsia and disregard the pregnancy until the eclampsia is controlled, has been widely taught in clinics and in the medical press, still in one-fifth of the deaths from this disease, this course was not followed, and operative delivery was effected shortly after the doctor had seen the patient. Eight were delivered by forceps, and one must assume, whether or not correctly so, that cervical dilatation was complete; 5 were subjected to cesarean section, and in two a succession of methods were employed before delivery was accomplished. One must conclude that in South Carolina, eclampsia involves peculiar and terrific dangers.

At least sixty-six of the 224 women who died

after reaching the last trimester of pregnancy had some type of operative delivery, an incidence of almost 30 per cent. Ten were delivered by cesarean section, six because of eclampsia and five of these died of the eclampsia, and three others who died of sepsis. Of the ten cases only three babies were salvaged. Sepsis after cesarean section should be rare, because section is almost always contraindicated after vaginal examination or manipulation, and when done in such cases transcervical section has been demonstrated to be safer. If a low section is not done and in all grossly contaminated cases hysterectomy should follow section. Section is justifiable in the case of a dead baby or one of questionable viability only in the rarest instances.

One-third of the fatal cases delivered by forceps died of sepsis. When will we learn that it is unsafe to invade the genital canal of a woman in labor, except with the greatest care as to asepsis? Over three times as many women died of sepsis after forceps delivery than died after version, and yet, two more women were delivered by version than by forceps. Can it be that the old forceps, carried around in the bag from case to case, were dirtier and less efficiently sterilized than the operator's hands? Pouring boiling water over forceps lying in a dish pan or soaking them in weak lysol solution is not an efficient means of sterilization.

The portrayal of fact and speculation has been frankly made, and yet, it is believed that in the main, it has been fairly done. Neither the facts nor the deductions made from them are pleasant for South Carolina doctors to contemplate, and they would be less pleasant to the intelligent layman. They seem to conclusively show that the cause of the high maternal mortality does not lie at the door of our so-called midwives. True, it is that the fault is not wholly with the profession. There are several aspects to the question.

Popular ignorance of the necessity of adequate prenatal care is important. Even if every doctor in the State were able and willing to give such care there would still be many, many women who would not avail themselves of this service.

Poverty is still another important non-medical factor. The profession has given of its time and knowledge and of its money without hope or expectation of financial return in a way that is appalling. The burden has been heavy, and he who has given, has not been without his own economic problems. Nothing but praise can be rendered him for this service so generously given. But, if the service to pregnant women has been given in a careless, hurried manner, submerging the obstetrical conscience, disregarding cardinal principles, then were it not better that this service not have been given at all? Certain facts and surmises disclosed by a study of this report would seem to so indicate.

No doubt inadequate obstetrical training both in medical school and after graduation is an important factor in the dreary picture. One does not expect every practitioner to be a specialist in obstetrics. Nor does one expect that the obstetrical specialist shall have every maternity case referred to him. But the general practitioner should understand the cardinal principles of asepsis, the peculiar dangers in forcible delivery, the hazard of placenta previa and the role of anesthesia and surgery in the mortality from eclampsia. To know these things presupposes, perhaps, more obstetrical knowledge than has been acquired by many South Carolina physicians who still undertake to do maternity work.

What of the remedy? Medical care, paid for *en masse*, by the State would not solve the problem. It would not improve their obstetrical knowledge or lessen the hurry of the doctor. No doubt he would receive in many instances a larger fee per case, than now, where he frequently receives nothing, but the fee could not be commensurate with the demands of time and skill and would probably tend to lower the collectable fee for those cases not coming under the plan.

State medicine would not immediately remove the ignorance of the masses, nor the unwillingness to go to hospital for abnormal delivery.

On the other hand the profession can not carry unaided the burden of adequate obstetrical care to the indigent. The demand on time and other resources is too great. Perhaps, the best solution will come from a combination of State aid through the department of public

health, together with a stipend for the physician who is called to render service to the destitute, combined with better training and supervision of midwives.

Prenatal care is preventive medicine, and should be offered as freely to the destitute as any other type of preventive medical service. Public education as to its value is just as important as is the knowledge of the value of prophylactic innoculation. If one concedes that preventive or prophylactic medicine is a function the State should render to its destitute citizens, then one must concede that the State should include in that service prenatal care.

The demands upon the physician in attempting to care for all destitute women in labor are too great for him to undertake without financial aid. Even midwives, poorly trained and poorly supervised as they now are, have demonstrated their usefulness in caring for these patients. Their mortality rate, based on the ratio of all deaths with which they were associated, (including cases where they were relieved by physicians) to all live births attended by them, is just half that of physicians based upon the ratio of deaths, attended solely by them to live births which they attended. Well trained and supervised midwives, aided by State supported prenatal clinics could be entrusted with the delivery of a greater proportion of destitute women, thus lightening the burden on physicians without affecting their incomes, and if they received a fee for attending abnormal or complicated cases, their income would really be increased, without an increase in their work.

For such a scheme to be practicable, each of the postulates would have to be true, namely, this service must be restricted to those unable to pay a physician for complete care, midwives must be better trained and carefully supervised, and physicians must be paid a fee to care for cases recognized as abnormal before falling into labor and for complicated cases to which they were called by attending midwives. Are the difficulties involved in solving the problem greater than the need for its solution?

BOOK REVIEWS

THE NATIONAL FORMULARY, Sixth Edition, National Formulary VI, N.F. VI. Prepared by the Committee on National Formulary by Authority of the American Pharmaceutical Association. Published by the American Pharmaceutical Association, Washington, D. C., 1935.

The first edition of the National Formulary came off the press in 1888. We now have the Sixth Edition. This is the official volume of the American Pharmaceutical Association and like the Pharmacopoeia becomes official throughout the country on June 1. It is a companion volume to the Pharmacopoeia and deserves the same serious consideration as a practical guide to the profession. The formulary will issue supplements also and engage in extensive research work. The book should be available to the entire medical profession.

A TEXTBOOK OF SURGERY, By American Authors. Edited by Frederick Christopher, B.S., M. D., F.A.C.S., Associate Professor of Surgery at Northwestern University Medical School; Chief Surgeon, Evanston (Illinois) Hospital. 1608 pages with 1349 illustrations on 730 figures. Philadelphia and London: W. B. Saunders Company, 1936. Cloth, $10.00 net.

This is a volume of sixteen hundred and eight pages. The plan of the book is to include a large number of contributors representing many special fields in surgery. This is intended to provide texts of the very highest authorities. A tribute has been paid by the author to the late Dr. E. Starr Judd whose wise counsel aided materially in making the book worthwhile. It would appear that in the forty chapters practically the whole range of surgery has been covered. The contributors represent nearly every great University in the country and nearly all sections of the country. There are many creditable illustrations. The book is encyclopedic in scope yet all within one volume.

ALLERGY OF THE NOSE AND PARANASAL SINUSES, A Monograph on the Subject of Allegry as Related to Otolaryngology. By French K. Hansel, M.D., M.S., Assistant Professor of Clinical Otolaryngology, Washington University School of Medicine; Fellow of The Association For The Study of Allergy, The Association of Resident and Ex-Resident Physicians of the

Mayo Clinic, the American Laryngological, Rhinological and Otological Society, and the American Academy of Ophthalmology and Otolaryngology. With fifty-eight text illustrations and three color plates. St. Louis, The C. V. Mosby Company, 1936.

This is the most extensive monograph on an ever widening field yet to come to the reviewers desk. It is a book of eight hundred and twenty pages. The illustrations are excellent.

THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA, Eleventh Decennial Revision, (U.S.P. XI). By authority of the United States Pharmacopoeial Convention held at Washington, D. C., May 13 and 14, 1930. Prepared by the Committee of Revision and Published by the Board of Trustees. Official from June 1, 1936. Agent: Mack Printing Company, Easton, Pa.

The average practitioner may not be seriously impressed by the importance of this new revision which is to become official on June 1, but that is no reason why a new conception may not be promoted about this great book. First of all the book is now well beyond one hundred years old as will be noted by the fact that the Medical Society of South Carolina in September 1818 in convention assembled approved of the plan for forming a National Pharmacopoeia and appointed delegates to further their wishes in the matter. It would be appear that the time has arrived for the institution of a campaign with the slogan, Back to the Pharmacopoeia. It is rare that the Pharmacopoeia as revised will not supply ample therapeutic resources. Then there is an important economic problem. Many of the specialties and proprietaries are invaluable but often they are expensive to the patient. Many surveys indicate that the trend is on the increase for physicians to prescribe these remedies rather than those of the Pharmacopoeia and the National Formulary. The new revision is going to be much more attractive to the profession than has hitherto been the case. Instead of waiting ten years to include new remedies and delete old ones annual supplements will be issued keeping the Pharmacopoeia up to date. Then there is another reason the research division is international the results of which will be included in these supplements. Every druggist should have a new copy and every doctor have access to one.

CLINICAL HEART DISEASE, By Samuel A. Levine, M.D., F.A.C.P., Assistant Professor of Medicine, Harvard Medical School; Senior Associate in Medicine, Peter Bent Brigham Hospital, Boston; Consultant Cardiologist, Newton Hospital; Physician, New England Baptist Hospital, Boston. 445 pages with 97 illustrations. Philadelphia and London: W. B. Saunders Company, 1936. Cloth, $5.50 net.

This book has been written largely for the general practitioner and the author has presented many practical points for his guidance in the treatment of heart disease. The various mechanical aids of modern times have been clearly described but wisely subordinated to clinical experience and judgment.

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VESICULAR ERUPTIONS OF HANDS

By
JOHN M. VAN DE ERVE, M.D.,
Charleston, S. C.

Vesicular eruptions of the hands are often recurrent and resistant to treatment. They are common and present a problem faced frequently by every physican.

The etiological conceptions have followed the swing of the research pendulum. At first ascribed to food, later to nerves, then to foci of infection, they are now ascribed, in the opinion of most dermatologists, to fungous infections. We feel that there are many causes other than fungi.

The eruption of pompholyx (dyshidrosis, trichophytid, etc.) is usually characteristic, exhibiting deep-seated sago-grain vesicles, rather deeply embedded, occurring along the sides of the fingers and in the palms of the hands, usually being symmetrical. The vesicles resulting from local external irritation or those of eczema are more superficial, tend more to attack the dorsum of the hands, break much more easily, with crusting and oozing, and are more diffuse. There is considerable burning and itching, before the outbreak and after, and the eruption usually renders the skin sensitive to such mild irritants as soap and water.

In considering the etiology, we must ask ourselves these questions: Why is it that fungous infection causes a vesicular eruption that is confined only to hands and feet? What explains a dermatophytosis producing a vesicular dermatitis in certain persons and not in others, or in the same person at different times? If an external irritant explains a case, why are not other regions involved where the skin is certainly more sensitive? What is the explanation of the symmetry of the eruption?

We believe that there are two major factors concerned. Certainly, internal conditions influence the condition. Apparently, the neuro-circulatory-endocrine balance of the patient, the general status of the body and its environmental balance, play a determining part in the eruption. There are many cases where no precipitating or trigger mechanism is to be found by present methods of study. Cases are reported as being caused apparently by nothing more than an emotional storm. Yet many people are subjected to just as severe emotional stress and do not develop the condition. For the present, then, we can only postulate a vague predisposition in some way brought about by the general condition of the patient and it's effect on the local tissue.

The second major factor is that of the precipitating or trigger mechanism. It has been shown in different cases that food (oranges, e. g. Wise) may be the cause, in others that bacterial foci in teeth and elsewhere are operative, and that foci of fungous infection, particularly on the feet, are causative. It is known, and accepted, that external irritation may produce direct vesicular eruptions of any portion of the exposed skin. Strong acids, alkalis, ultraviolet exposures, and extremes of temperature may at times cause vesiculation. Lesser concentrations of irritants acting on the sensitized skin of the hands may produce the vesicular phase of eczema. The direct infestation of the local tissue by fungi, parasites such as scabies, bacteria in impetigo, may produce vesicles by causing acute inflammation.

The response of the skin to the various irritants and toxins is somewhat similar. We con-

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sider here only the vesicular response. The irritant, acting from without, or within, causes a local vascular dilatation with an outpouring of serum into the skin. Forcing its way outward between the cells of the prickle-cell layer, a condition of spongy edema is set up, which soon becomes so marked that the cells are forced aside, the horny layer is lifted up as a roof, and the vesicle formed. In case of external irritants, the vesicles are more superficial and more easily ruptured. When the cause is internal, the vesicles are more deeply-seated and less easily ruptured.

When confronted with a vesicular eruption of the hands, the major diagnostic studies to be made are:

1. HISTORY:
   1. Onset: sudden, gradual, its relation to
      - Seasons
      - Meals, foods
      - Emotional stress or strain
      - Physical activity
      - Exposure to external irritants
        - Chemicals
        - Plants
        - Industrial
   2. Recurrences—possible causes as above
   3. Associated symptoms
   4. Detailed questioning by systems for foci:
      - Gastro-intestinal:
        - Gastritis
        - Colitis
        - Intestinal dysfunction
      - Circulatory
      - Eye, ear, nose, throat, sinuses, teeth, tonsils
      - Genito-urinary
        - Menstrual abnormalities
        - Cervical infection
        - Prostatic infection
        - Bladder and kidney infection
      - Neuro-muscular
        - Excessive activity and tension
        - Fungous infections of the feet
   5. Response to previous treatment.
2. PHYSICAL EXAMINATION:
   1. Maxim—*"In eruptions of the hands, look at the feet."*
   2. Complete physical examination, covering all possible foci in addition to regular procedures.
   3. Study feet carefully for vesicles, scaling between toes, and changes in nails.
   4. Hands—
      Vesicles, type, superficial or deep, easily ruptured or not, distribution palmar or dorsal.
3. LABORATORY:
   1. Remove vesicle roof from feet and hands, soften with 15 per cent potassium hydroxide, and examine with microscope for fungi.
   2. In obscure cases:
      Patch tests for external irritants and sensitivity.
      Scratch tests for food and epidermal sensitivity.
      Trichophytin sensitivity tests.
      X-ray for foci of infection, sinuses, teeth, et al.

The incidence varies. Dermatophytids and dyshidrosis of obscure origin are common on hands, dermatitis venenata (external irritant dermatitis) and direct local dermatomycosis are less common.

4. TREATMENT:
   1. Specific:
      1. Remove irritant or focus of infection if found.
      2. If fungous infection—trichophytin extracts may be used but are still rather unreliable.
      3. If due to poison ivy—injections of the extract intra-muscularly are of great value.
   2. Non-specific:
      1. Local: (for acuteness to chronicity in order named)
         1. Wet dressings of 1-4000 potassium permanganate solution or 1-15 aluminum subacetate solution.
         2. Antiseptic pastes.
         3. Ointments containing sulphur, salicylic acid, ammoniated mercury, or tar.
         4. Avoidance of soap and water. If rubber gloves are advised, cotton gloves must always be worn underneath to prevent maceration.
         5. Soothing creams to protect skin from dirt and moisture.
         6. X-ray only when indicated.

2. General:
    1. Nutritious diet, properly balanced for minerals, bulk, and vitamins, eliminating any suspicious food elements, particularly those indicated by scratch tests.
    2. Calcium administration.
    3. Fowler's solution or small doses of strychnine.

While there are some cases that prove recalcitrant and stubborn, the majority of the vesicular eruptions on the hands respond favorably to intelligent care.

DISCUSSION

Dr. J. H. Crooks, Greenville:

Dr. van de Erve has brought to us one of the most difficult phases, I think, of cutaneous medicine. All of you, I know, have from time to time treated these conditions and found how much trouble they really are, how often they recur in spite of every effort you put forth for proper treatment. You also have found that you can overtreat them, and one of the most difficult things for us to do is to keep our treatment at the minimum strength. Any of these conditions will respond, not always quickly but usually readily, if you will give them some soothing treatment and not use something like salicylic acid, which spreads the eruption.

Oftentimes we do not find the cause of these conditions. Oftentimes we know that the patient has worked with something in his occupation which causes the eruption, but we can not find the causative factor. Often these patients, if you put them in a hospital, if they are bad enough, for a week, or keep them at home, will be improved, only to relapse when they return to work. Many of them are due to fungus infections—Monilia, Trichophyton, etc.

I had a case in a druggist and could not find what the cause was, so I had to go about making a history for him. I took him away from his work, and he improved. When he went back to work the eruption returned. I finally found that his eruption was due to chloral hydrate. He was making up solutions of chloral hydrate.

Sometimes we find cases in school teachers due to chalk. In housewives we sometimes find the eruptions due to cleaning solutions or preparations, strong soaps, insect powders, etc. I have had more cases among textile employees than any other class except housewives. One textile employee was a painter, and I found his eruption was due to Sonoco spirits, which was used as a thinner. I had the whole crew of painters changed back to turpentine as a thinner, and the patient's eruption cleared up. In office workers, in the case of a stenographer, we proved that her eruption was due to ink from her typewriter ribbon. In farmers we have found it due to spraying solution—the arsenic in the spray. One patient we had happens to live in the eastern part of the state, where the season is early—where bulbs blossom early. In her case the juice of jonquil stalks happened to be the cause.

Among beauticians, I suspect the cause to be some of the solutions they handle. One woman was positive to Lux soap, permanent-wave solution, hair dye, and various other things. When she first came to me she had no eruption on her face but had it on her hands. We took her away from her work for a time and cleared it up, but when she went back to work some time later she had the eruption on her face as well as on the hands.

I have had one case in a mortician, who was susceptible to embalming fluid. There have been several cases among physicians in whom we have not been able to prove to what they were susceptible, except one who was susceptible to novocain.

In many cases I really suspect bacterial infection, and any patient who has an eruption on his hands or anywhere else and has a focus of infection should have the focus of infection removed.

We found one patient who was very sensitive to chicken. If she stayed off chicken for two weeks or a month she would get well, but if she would go back to eating chicken she would have a recurrence.

We have had several cases among gasoline handlers, especially those handling the red (ethyl) gasoline.

The greatest percentage of cases has been in housewives—about thirty per cent. A housewife, of course, is subjected to so many irritants that it is very hard to find which one is at fault.

One patient was a dry cleaner and used what is called dry-cleaning solvent. His response was good while he was away from that solution.

Chipman has classified similar eruptions to these Dr. van de Erve has mentioned as dermatophytoses and dermatophytids. He also speaks of recurrent eczematoid eruptions and seborrheic dermatitis, which is often taken for dermatophytid.

In closing, I wish to express my appreciation to Dr. van de Erve for bringing up this subject, and to urge you not to make light of these affections but to treat them very thoroughly, because sometimes these people have to stay away from their work for two or three months at a time, and it is a very important matter to them.

THE QUESTION OF DRAINAGE IN ABDOMINAL SURGERY

By

CARL B. EPPS, M.D., F.A.C.S.,
Sumter, S. C.

Nothing in surgery is more firmly established than is the value of drainage in pyogenic infections. In these conditions our first thought is the securing of adequate drainage, whether it be in the brain abscess, in a sinus, or a soft tissue abscess, an empyema, a bone infection, or elsewhere. The rapid fall in temperature, the relief from pain, and the general improvement in the patient when free drainage is secured, are all so well known as to require no further mention here.

Therefore, when we come to consider the question of drainage in abdominal surgery, where we face infections caused by the same organisms, our answer must embrace two chief issues, namely: first; *can* we drain the peritoneal cavity?; and, second; will our efforts to drain do the patient more harm than good? Our answers to these two questions will determine our attitude toward the subject under discussion, and may vitally influence the welfare of our surgical patients.

In this paper, I have endeavoured to maintain an open mind, and to state as nearly as I can both sides of the question. In order to do this, I have analyzed expressions of opinion from 41 surgeons, giving us what I believe is a fair cross-section of surgical opinion in America, Europe, and Australia.

Let us for a moment consider the peritoneum. The peritoneum is a closed sac forming a covering not only for the abdominal walls, but also for the contained viscera. Until a few years ago the peritoneum was considered as an absorbing membrane only, and perhaps too much stress was laid upon the danger of absorption of toxins in peritonitis. We have now learned that the function of the peritoneum as a secreting membrane, pouring out an exudate in the face of infection, is of vital importance in the presence of infection. The exuded serum and lymph, rich in germ destroying phagocytes is one of Nature's chief defenses in this region. From this exudate are formed the dense walls of fibrin that may either be valuable in walling off infected areas, or, on the other hand, may cause troublesome adhesions, perhaps even leading to intestinal obstruction.

As in other things both surgical and medical, the pendulum of opinion concerning drainage of the abdomen has swung back and forth, with valiant and enthusiastic champions pulling from each side. The campaign in recent years against drainage is nothing new. In 1885 Mickulicz successfully treated a case of perforated small intestine without drainage. So at least for 51 years surgeons have had this questions to fuss about.

Let us now consider some of the arguments against drainage of the peritoneal cavity. One of the first things that brought condemnation to abdominal drainage was the practice of multiple drains, the drains not only in the upper and lower ends of the incision, and in the middle, but also stab drains at the same time, and perhops on both sides of the abdomen, giving the patient a porcupine appearance. This has, I believe, been practically discarded. Naturally, it led to many hernias, also to post-operative ileus and obstruction. The healing process was delayed, and the cost of hospitalization greatly increased.

The experimental work done on dogs by three Chicago investigators has caused considerable adverse criticism of drainage in the abdomen. These men, Drs. Buchbinder, Droegemueller, and Heilman, tried to simulate in the dog the conditions found in the human abdomen in the presence of intestinal perforation, such as we have in ruptured appendix and gun-shot wound cases. They isolated open loops of lower ileum, making end to end anastomosis of the other free ends of the ileum. They reported upon 3 series. In the first group, including 31 dogs, the abdomen was closed and no further operation was done. The mortality was 90.3 per cent. In the second group, consisting of 33 dogs, the abdomens were opened after 24 hours, the open loop of ileum removed, and the abdomen closed without drainage. The object here was to determine what benefit, if any, would be derived from simply removing the focus of infection. The mortality here was only 58 per cent. In the third series, including

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20 dogs, the loop was removed in 24 hours, the wound being drained with 2 glove rubber drains, 5 centimeters in width, one running across the old loop area and into the pelvis, and the other across the same area and up into the upper abdominal area. The mortality in this series was 100 per cent. There are 2 outstanding objections to this experiment being a convincing argument against drainage in the human abdomen. The first is that the drains were run across the focus of infection area into the lower and upper abdomen, thereby carrying infection to other areas. The second objection is that no surgeon, so far as known, has had any such mortality rate following the use of drains in the human being. These authors mention what they call the "Inconsistency between the well known experimental observations of numerous workers and clinical conceptions and treatment of this disease," namely, profuse peritonitis, and they believe it due to 3 factors: 1st., there is still a difference of opinion as to the duration of the effectiveness of drain; 2nd., the idea is still prevalent that some types of drains are more effective than others; and, 3rd., the operator's conception of the type and extent of the peritonitis with which he is dealing is often erroneous. They claim that the character of the exudate has no bearing on effectiveness of the drain. This does not agree with Hertzler and other observers who claim that the more fluid the exudate, the longer drainage will continue. The three authors state further that in rapidly spreading diffuse peritonitis drains of any kind are not only useless, but increase the degree of contamination and the rapidity of spread in the territory beyond the zone of involvement. Although they use this as an argument against drainage, still they stress the great difficulty in differentiating between a local and a general peritonitis, saying that a large abscess is frequently mistaken for a general peritonitis. They state that a drain does not extraperitonealize a zone already the site of a spreading infection. They quote Yates who found that after 6 hours carmine injected at the ensiform cartilege of a dog could not be drained through drains in the peritoneal cavity. Yates said that drainage of the peritoneum is impossible, and that drainage of the peritoneal fluid is depleting, and, third, that you cannot drain away pus and blood.

Dr. Ross Grosshart, of Tulsa, Oklahoma, does not drain. He pours ether in the abdomen after removing the focus of infection so far as possible, and closes the wound tightly. He reports 6 per cent mortality. He claims that the gonococci and colon bacilli, being aerobic, will not multiply well in a closed cavity, and that the aerobic streptococci kills the patient anyway whether drained or not. He claims that ether is a non-irritating antiseptic, and dissolves the capsules of bacteria, lowering their vitality until phagocytical action is established.

Dr. W. Dennis Kendig, of Kenbridge, Va., points out that drains may cause secondary infection, fistulas and hernias, favor ileus, and prolong convalescence. However, he favors drainage under certain circumstances, as we mention elsewhere in this article.

Dr. Alfred J. Trinca, of Australia, considers the question of drainage still a matter of contention, but says that advocates of non-drainage are gradually gaining adherents. He had a mortality of 2.46 per cent in a series of 244 cases of diffuse peritonitis treated without drainage. He considers the use of a drain in the majority of cases of peritonitis as not only futile and unnecessary, but possibly productive of great harm. But, although stating that more cases are being treated without drainage, he says that no appreciable decrease in mortality in appendicitis has been attained in the past 20 years. This author considers the peritoneal exudate in pus cases as a protective leucocytic and serological barrier, and its removal by drainage not only unnecessary but harmful. Then, in the next breath, he somewhat weakens his argument against drainage by stating, "The only fluid which escapes from the tube whilst it is in position is that which entered it during the process of insertion, or that which makes its way at the side of the tube." As evil effects of drains he enumerates the following:—Aggravation of existing peritonitis by the tube, but says that the increased exudate usually remains localized; fecal fistula; damage to omentum; damage to abdominal wall; post-operative hernia; adhesions and obstruction; introduction of organisms from the air; ileus ; and delayed and painful convalescence.

S. Row, a British surgeon, does not advocate peritoneal drainage, but he drains the muscle

layers, as he found wound infection troublesome.

Drs. D. A. Willis and J. M. Mora, of Chicago, claim that "Drainage has no effect on the mortality rate." They find the temperature normal several days earlier if undrained, and hospitalization distinctly shortened. They report but one death in a series of 100 cases of acute suppurative appendicitis.

Having dwelt to some extent upon the arguments used against drainage, we will now consider the other side of the debate as presented by those who favor drainage of the peritoneal cavity.

One of the staunchest advocates of peritoneal drainage is Dr. Robert C. Coffey, of Portland, Oregon. His eminence as a surgeon, which has been augmented by his authorship of the well known operations for bilateral transplantation of the ureters and for radical removal of carcinoma of the rectum, commands attention. He uses the Coffey-Mikulicz drain, an improvement on the old Mikulicz drain, and has named it the "Quarantine Drain." The author states that serious abdominal infection may be cured spontaneously by Nature. Nature, he says, first tries to absorb and eject the offending substances. Her next step is to try to wall off the infection with a barrier, or so-called quarantine. Therefore, Coffey considers that the surgeon must, so far as possible, imitate Nature by first removing the focus of infection, and then strive to protect the healthy tissues by walling them off from the focus area. Mikulicz used an open sac of gauze placed between the free peritoneal cavity and the diseased area, the sac being then tightly packed with a gauze strip. The chief objections to this drain were that the large area of gauze caused too free an extravasation of peritoneal fluid, and that the small piece of gauze coming out of the external wound gave insufficient drainage, and was soon clogged. Also, when the drain was removed, it left a large raw surface that sometimes caused serious hemorrhage, or led to re-infection. These were some of the things that led Clark, of Philadelphia, and Yates, of Milwaukee, to their experiments to prove that drainage should be largely abandoned. Dr. Joseph Price, of Philadelphia, was fond of using the Mikulicz drain, and secured results that were outstanding in that period of surgery. The Coffey quarantine drain substitutes for the Mikulicz gauze sac a sheet, or two or three sheets, of soft, smooth rubber tissue. And for the single long piece of gauze packing a number of gauze wicks are substituted. These wicks, usually ten or twelve in number, are narrow and straight. They are carefully placed in the wound where they will afford the maximum of drainage from the focus of infection. Then a layer of the rubber sheeting is carefully arranged around the bundle of gauze wicks. Then one or more strips of the rubber tissue are placed above the first. This forms a sort of compound cigarette drain. The drain is the same size at the point of exit from the abdominal wound as it is at the bottom of the wound. This, the author claims, is a vital factor in giving adequate drainage. The abdominal wall is drawn rather loosely around this drain. The wicks are removed one at a time one week after operation, and one week later the rubber packing is removed. Coffey claims that this drain is ideal both as a drain and as a quarantine to protect the healthy tissues from the focus of infection. After using this drain for 25 years in various forms of abdominal infection, Coffey says:—"I believe it to be the most important agency that has entered into my surgical practice, whether considered from the standpoint of saving life or reducing morbidity. *It embodies the most fundamental principle connected with abdominal surgery.*"

Buchbinder, Droegemueller, and Heilman, whose experimental work on dogs was described heretofore in this article, state that "One cannot question the necessity for drainage in local peritonitis." They say that the immobility of peritoneal viscera forming the cavity walls prevent encapsulation of the drains.

Dr. J. F. Baldwin, of Columbus, Ohio, reports the successful removal of 6 feet of jejunum, using a cigarette drain in the wound.

Dr. Virgil S. Counseller, in the October, 1935 issue of Surgical Clinics of North America (The Mayo Clinic Number), says "I believe it is a good thing always to put in a drain (in cholecystectomy) because one cannot always tell when the tie on the cystic duct will let go." He claims that the drain does not predispose to post-operative hernia, and it allows the surgeon to discover bile leakage.

Dr. Byron B. Davis, of Omaha, Neb., drains some cases but not the average cholecystectomy case.

Dr. Charles R. Davis, of Detroit, reports 951 cases in which 229 were drained. His mortality in all cases, drained and undrained included, was 3.36 p.c. He had no fecal fistulas. He noticed that muscles once separated by drains do not close tightly quickly after removal of drains. He removes the tube drains on either the day after operation or the following day, and cigarette drains one day later than tube drains. He favors the insertion of a tube drain to the pelvis, and also a cigarette drain to the abscess cavity, or to the site of the appendix. He quotes John B. Deaver as advising not to remove drains until they fall out of the wound of themselves, and similar advice from F. C. Warnshuis. Others advise removal a little at a time, each day.

Dr. Arthur C. Henthorn, of St. Johns, Mich., agrees with Lawson Tait who advised "When in doubt, drain." He says that when the tract is well organized it forms a tract of least resistence for fluids of the infected cavity. He claims that the only real contraindication to drainage is in cases of gastric and intestinal anastomosis.

Dr. W. Dennis Kendig, of Kenbridge, Va., claims 3 advantages for drainage of the abdomen, as follows:—1. The establishment of a sinus down to one small area. 2. The protection of walling off adhesions. 3. The relief of abdominal pressure. He advises drainage when we have, or expect, any of the following:—Necrotic tissue, or a localized focus of infection; intra-abdominal pressure; exposed extraperitoneal, or oozing spaces; or intra-abdominal abscesses. He quotes La Hay as saying that a drain, in order to be effective, must be within 1 or 2 inches of the point of origin of the infection, one exception being the presence of considerable abdominal pressure. The pressure is supposed to aid drainage by preventing early formation of impervious adhesions. Kendig calls the attention to the fact that such expressions as "When in doubt, do not drain," and the reverse, acknowledge doubt in the mind of the speaker. He favors the suction apparatus in removal of fluid from the abdominal cavity, it being less apt to cause injury to the tissues. He says that Wilensky's and Berg's claim that the advisability for or against drainage can be determined at the time by a hasty examination of smears is open to question because it is hard to estimate the virulence of the infection or the resistance of the patient.

Dr. F. D. Kennedy, of Norton, Kansas, continues to drain in certain cases. He says that a drain in the presence of infection is deleterious to peritoneal resistance and should be introduced only to exclude more malign influences. He states that peritoneal drainage must be local, and unless there is something to be gained by rendering an area extra-peritoneal, or by making from such an area a safe path of least resistance leading outside the body, there is, aside from hemostasis, no justification for its use. He believes it is better to put in drainage in the hope that even a few hours of drainage will benefit. He closes by saying that he thinks he will continue to drain free pus cases "more because I think I will sleep better for it than because it is really necessary."

Dr. Edmund H. Mensing, of Milwaukee, calls attention to the fact that most cases of peritonitis start in the pelvis, even those that result from perforating lesions higher up. This can be used as an argument for pelvic drainage.

Drs. Mentzer and Woolsey, of San Francisco, drain only about 30 per cent of cholecystectomies.

Dr. Herbert M. Miller, of Providence, R. I., reports 934 appendectomies with 248 drained cases.

Dr. Alfred J. Trinca, of Australia, already quoted under the discussion against drainage, considers drainage necessary under the following circumstances: First, where the infective focus has not been eradicated; second, in the presence of free fecoliths; third, where we have raw areas; and, fourth, in appendiceal abscesses.

Dr. Owen H. Wangensteen, of Minneapolis, considers drainage in cholecystectomies imperative.

Dr. W. M. Weeden, of New York, uses a Gibson-Mikulicz drain. He reports its use in 455 out of 860 drainage cases. This drain is in the form of a cornucopia made of rubber dam, apex inserted downward, the tip having been removed and one or two holes cut in the side. After removal of the focus of infection

as nearly as possible, the drain is inserted and spread out so as to press against the walls of the cavity. It is then tightly packed with strips of gauze. When he removes the drain on the 3rd. or 4th. day, to use his exact words, it leaves, in the average adult, "a cavity the size of 2 fists surrounded by omentum and loops of intestines." This appears to the average surgeon to be very radical abdominal drainage! The author claims that the temperature and pulse drop almost immediately, and that improvement seems miraculous. In his report on 1588 cases of acute appendicitis, drained and un-drained, he gives a mortality of 4.9 per cent. However, the Gibson-Mikulicz drain gave 14 per cent of hernias, which is not surprising, considering the size of the opening left by the drain.

Drs. D. A. Willis and J. M. Mora, of Chicago, advise drainage where there has been, in later cases, denudation of the tissues, and where fecal contamination has occurred. They found the abdominal incision far more apt to be infected than the peritoneal cavity, and were surprised to learn that they had wound infections in 50 per cent of their undrained cases of ruptured appendix.

Dr. Hustinx advises drainage only where the appendix cannot be entirely removed.

Dr. E. T. Crosson believes in enough drainage material where drainage is indicated.

Dr. H. K. Tuttle reviews 3285 cases, and feels safer with small rubber drains introduced down to the appendix area whenever there is evidence of peritoneal involvement.

Dr. H. Glasscock reports 108 drainage cases, and considers drainage indicated if the appendix has perforated.

Dr. Muller considers drainage of only local importance.

Dr. F. W. Bancroft prefers drainage, but had 15 per cent post-operative hernias.

Drs. Quain and Waldschmidt use drains for about 2 days in acute suppurative cases, and 12 days in gangrenous cases.

Dr. R. M. Harbin reports 818 cases of appendicitis, and prefers drainage when the least bit doubtful, saying that, although it increases morbidity, it decreases mortality. He found that the drained cases required .6 per cent secondary operations and the undrained .4 per cent.

By a study of the opinions of these various surgeons we see that the question of drainage in abdominal surgery is still a live issue. Personally, I believe that in this, as in most other questions, the highway of safety lies midway between the two extremes. We must neither travel with those who put multiple drains throughout the abdomen, and drain without due consideration of indications, nor must we lock arms with those who are so antagonistic to drainage that they close all abdomens without regard to the conditions found.

As stated at the beginning of this article, we must consider two main points; first whether or not we can drain the abdomen, and, second, whether or not our efforts at drainage will do more harm than good. I believe that it has been firmly established that we can drain at least a part of the abdomen. It seems reasonable to believe that drainage, even for a few hours, may be of such benefit to the patient as to spell the difference between recovery and death. I have been struck with the fact that if a wound shows fair drainage after 24 hours the patient has a far better chance of recovery than if the wound has a dry appearance. I have not noticed any special stress laid upon this in the literature. To me it is hard to believe that the very profuse discharge of pus following drainage of the general peritonitis case is entirely from a very small area.

So far as my personal experience goes, and judging from what I have read, the dangers of drainage, as to morbidity and mortality, have been exaggerated by those who are against drainage. The insertion of a soft rubber tube, of rather large caliber, with fenestrations, does not seem to cause any definite harm if removed within a reasonable time. I believe in removing the drain after 24 hours unless there is some indication for leaving it longer. I feel sure that its benefits will far outweigh any possible dangers. Adhesions are apt to form in the abdomen in such cases, and, in fact, in clean cases, whether or not they are drained. As to fecal fistulas, I cannot remember a single case that could in any way be attributed to a drain. Nor have I ever seen a troublesome hemorrhage caused by a drain.

In conclusion, I will say that unless more definite evidence is shown against drainage, I cannot conscientiously cast aside the only means

at our command to aid Nature in one of her chief measures of defense against infections, namely, drainage.

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SOME OF THE FATAL ACCIDENTS INCIDENTAL TO PREGNANCY

By

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The more serious accidents occurring in pregnancy or during labor are hemorrhage, eclampsia and infection. Of the 25,000 gravidae who die annually in the United States, 4000 succumb to hemorrhage, 5000 die from eclampsia and 6000 are the victims of infection. That a large percentage of these fatalities is preventable is the profound conviction of those who have studied this tragic situation. Practically nothing is done to prevent this needless human sacrifice because neither the schools, the profession, nor the public hold the obstetrician and his art in very high esteem, and the care of the pregnant woman is relegated to the young and inexperienced practitioner or, that anachronism of modern medicine, the American midwife.

If the profession will appreciate the pathologic potentialities of obstetrics, and the public pay the child-bearing woman the respect she deserves, prenatal care will take its proper place in preventive medicine, and the midwife pass into the category of economic monstrosities.

There is little doubt that death from hemorrhage, eclampsia, and infection is largely preventable and the responsibility for the present high mortality rate can, in almost every instance, be placed on the obstetrical attendant.

Death from hemorrhage occurs in placenta previa, premature separation of the normally implanted placenta, or abruptio placentae, and postpartum hemorrhage. The incidence of placenta previa is fairly high, the figures given by various authors vary from 1 in 1500 to 1 in 200. It is ten times as frequent in the multi-

Read before the Fifth District Medical Society, Winnsboro, S. C., May 26, 1936.

para as in the primipara—and increases with age and multiparity. The mortality in various series of statistics ranges from 1 to 19 per cent for mothers and 10 to 80 per cent for the babies. The diagnosis of placenta previa is not difficult; given a woman in the last three months of pregnancy with a painless uterine hemorrhage, the recognition of placental tissue over the internal os on vaginal examination leaves no doubt as to the condition present.

You are all familiar with the treatment of this condition and I will only refer to some of the important features for the sake of emphasis and the value of the different methods. The primary object of treatment is to save the woman's life and, if possible, that of the infant.

In marginal placenta previa, hemorrhage usually occurs at the end of the first stage of labor, when rupture of the membranes is usually sufficient. This allows the placenta to retract with the uterus, and the head entering the lower uterine segment produces sufficient pressure to aid in stopping the hemorrhage. When the cervix is fully dilated, the labor should be terminated by forceps or version and immediate extraction.

We now have three methods of treatment—Braxton-Hicks' version, metreurysis, and cesarean section. For a complete description and discussion of these methods I refer you to any modern textbook on obstetrics, and I will only discuss them from the stand point of their practical application and relative value. If the patient has lost much blood, the baby is dead or nearly so, or very premature, Braxton-Hicks' version is preferable, safe, and easy of performance. It is only necessary to bring down one foot with sufficient traction to make the infant's thigh compress the placenta against the cervix to control the hemorrhage. Then let nature complete the job. Under no circumstances follow the version by extraction until the cervix is fully dilated.

Metreurysis was introduced by Maurer and Duhrssen in 1887, because of the high infant mortality of Braxton-Hicks' version. Any of the various inelastic rubber balloons on the market may be used. The great advantage of the bag over Braxton-Hicks' version is the reduction in infant mortality. Where the condition of the mother and child is good, when little blood has been lost, and the child is viable, the results following this method of treatment have justified its application in suitable cases.

Cesarean section in cases of central and partial placenta previa has, in recent years, gained a popularity which is fully justified by the results obtained. In favorable cases cesarean section has a general mortality of 4 per cent; in favorable cases of placenta previa the same rate should be possible and, in addition the infant mortality can be reduced to 5 per cent. In partial and central placenta previa, with the mother in good condition and a living and viable child, there is a positive indication for cesarean section.

With an incidence of 1 in 245 cases and a death rate as high as 50 per cent for the women and 95 per cent for the babies, abruptio placentae is one of the greatest accidents with which we have to deal. In striking contrast to placenta previa, abruptio placentae is a premature separation of the more or less normally implanted placenta. It usually appears later in pregnancy, at or near term; the onset is stormy, and pain precedes or accompanies the appearance of hemorrhage; the abdomen is tender, and the uterus is tense and board-like. The causes are toxemia of pregnancy, chronic nephritis, diseases of the endometrium and, rarely, traumatism. Toxemia is present in from 56.6 to 91.3 per cent of cases.

The treatment is similar to that of placenta previa, except that the indication for prompt evacuation of the uterus is urgent, because complete control of the hemorrhage is not possible before the uterus is empty.

Death from postpartum hemorrhage is rare today. There are 1100 postpartum deaths from hemorrhage reported in this country annually. The more frequent causes of severe or fatal postpartum hemorrhage are laceration of the cervix extending to or beyond the internal os, usually the result of breech extraction or forceps delivery through an incompletely dilated cervix; lacerations of the clitoris or the vaginal bulbs may cause fatal hemorrhage; atony following prolonged labor, or over distention from twins, or polyhydramnios, placenta previa, and abruptio placentae. The treatment is better to anticipate its possibility and prevent its occur-

rence by early correction of the causes of this calamity.

Mauriceau said: "Pregnancy is a disease of nine months duration." The truth of this is evidenced by the minor disturbances of the early months of gestation and the more serious ones of later pregnancy, the most important of which is the toxemia of pregnancy. This usually begins in the last trimester, first evidenced by hypertension and albuminuria and finally, if untreated, culminating in eclampsia.

I do not propose to go into a discussion of the subject except in its relation to the title of my paper. You are sufficiently familiar with the evolution of toxemia to its dramatic climax, eclampsia. Its mortality varies from 5.31 per cent to 45.7 per cent for the mother, and from 3.62 per cent to 42 per cent for the child. Of its causes we know practically nothing; with its tragic termination we are sadly familiar. Our treatment of eclampsia is handicapped by incomplete results, though the convulsions may be controlled, and the hypertension and albuminuria improved, unless the pregnancy is terminated the toxemia persists, and it is only a matter of time when the eclampsia recurs.

Puerperal infection may be defined as a genital infection of the parturient just before, during, or immediately after delivery. In the majority of cases the source of the infection is the attendant, whether physician or midwife. The causes incidental to puerperal infection are faulty technic in the conduct of labor. If the same meticulous care and attention to detail was practised in the delivery-room as in the modern operating room, puerperal infection in obstetrics would be as rare as wound infection in surgery is today.

These accidents of gestation can in a great measure be prevented. With proper prenatal care and periodic examinations of the gravida, edema, rise in blood-pressure, albuminuria, disturbances of vision, headache, and neuralgias, hyperacidity, substernal and epigastric pain, slight vaginal bleeding with or without uterine pain, are unmistakable warnings of impending trouble while there is yet time for palliative treatment, or at least to terminate the pregnancy before the patient's life is sacrificed to inaction and the good intentions with which Hell is paved.

PROGRAM

Fifth District Medical Society, Winnsboro, S. C., Fairfield Inn, 11 A.M., Tuesday, May 26, 1936

Invocation, Rev. G. G. Mayes.

Address of Welcome, Hon. W. A. Robinson, Mayor of Winnsboro.

Subject: Unannounced, Dr. W. P. Beckmon, Columbia, S. C., Director Mental Hygiene Clinic South Carolina State Hospital.

Subject: "Infantile Paralysis," Dr. R. M. Pollitzer, Greenville, S. C., Formerly Professor Pediatrics, Medical College State of South Carolina.

Subject: "Some Fatal Accidents of Pregnancy," Dr. H. W. deSaussure, Charleston, S. C., Associate Professor Gynecology, Medical College State of South Carolina.

Subject: "Management of Fractures From Standpoint of General Practitioner," Dr. Austin T. Moore, Columbia, S. C.

Subject: "Otitis Media—Some of its Complications," Case Report, Dr. Roderick Macdonald, Rock Hill, S. C.

Lunch.

Business Meeting.

Election of Officers.

Adjournment.

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JULY, 1936

THE TEACHING OF PHARMACOLOGY AND MATERIA MEDICA IN THE MEDICAL SCHOOL

In our editorial last month we stressed the importance of the new revision of the United States Pharmacopoeia and the National Formulary both of which became official June 1. We mentioned the tendency on the part of many physicians to lose interest in these official guides in the practice of medicine and to resort to the use of proprietaries and specialties. Surveys have been made in many parts of the country including our own state to determine approximately the percentage of prescriptions by the average physicians of these various ingredients. The latest surveys in South Carolina have been made by the Journal and on request by the School of Pharmacy of the University at Columbia and the School of Pharmacy at the Medical College Charleston.

The teaching of Pharmacology, Materia Medica and prescription writing at our State Medical School appears to be on a high plane and very practical. The principles of prescription writing are first taught and from then on each member of the class is required to write two prescriptions daily for the drugs studied the day before. These are corrected and returned. The black board is used quite frequently and the whole class is given a chance to criticize the prescription written. The prescription book used in this course contains a number of typical prescriptions and they are required to re-write them in abbreviated Latin. Great stress is placed on the U. S. P., the N. F. and the N. N. R. preparations. The drugs and preparations are displayed and examined by the student, and not only is the action or pharmacodynamics stressed, but he must know how to order the drug or preparations, or combination of same.

We feel that the whole subject is well handled at our State Medical School under the guidance of the Dean and his Faculty. Dr. W. H. Zeigler, the Dean of the School of Pharmacy has conducted a survey of prescriptions in a number of the leading drug-stores in Charleston and reports the percentages other than U. S. P. and N. F. preparations as follows:

40%
42%
33%
55%
40%
35%
50%
45%
8)340% = 42 1/2 % Total

The survey in Charleston compares quite fav-

orably with that in some other centers, in fact, appears to be much better. Fundamentally the Medical School can do much about the whole proposition and will do so but organized medicine is in position to supplement this effort to a great degree and we believe it a profound duty to undertake it.

PIEDMONT POST GRADUATE CLINICAL ASSEMBLY

The plans have been made for the second annual post graduate course at the Anderson County Hospital, September 8, 9, 10. Every effort will be made to provide three days of practical instruction for the general practitioner. The faculty consists of well known teachers in southern medical schools. The Southeastern Surgical Congress through its South Carolina section will put on a surgical program for one day in cooperation with the Assembly. The attendance last year was well above one hundred and it is expected that there will be a great increase this year over this figure. Efforts will be made to interest the physicians in the nearby states as well as the entire profession of South Carolina. The time selected should be an important factor in promoting a large attendance. The vacation period will have ended then and the extreme heat of summer no longer a dominate factor as a rule.

MEDICAL SOCIETY OF SOUTH CAROLINA

Minutes of the Regular Meeting of the Medical Society of South Carolina, held Tuesday evening, March 24th, 1936, at 8:30 o'clock, at Roper Hospital

The meeting was called to order by the President, Dr. W. Atmar Smith.

Present were: Drs. A. E. Baker, Ball, Beckman, Bowen, Bowers, Burn, Cain, Cannon, Chamberlain, Evatt, Finger, Heidt, Hope, Hoshall, Johnson, Lynch, McCrady, McInnes, Maguire, Martin, Mazyck, O'Driscoll, F. L. Parker, Peery, Prentiss, W. H. Price, Prioleau, W. M. Rhett, Richards, Rudisill, Rutledge, Sams, Scharlock, Scott, J. E. Smith, W. A. Smith, W. H. S. Speissegger, Sughrue, Taft, E. W. Townsend, J. F. Townsend, J. M. Van de Erve, Waring, I. R. Wilson, Robert Wilson, Robert Wilson, Jr.

Guests were: Dr. R. C. Bruce, Greenville; Dr. E. A. Hines, Seneca; Dr. Paul D. White, Boston; Dr. J. A. Shields, Richmond, Dr. Ross, Drs. Zeigler, Kinard, Cardwell, Foster, Martin; R. E. Stoops, E. U. Reed, R. Malcolm, R. W. Wimberly, R. R. Leamer, T. Q. Harbour.

The Minutes of the previous meeting were read and confirmed.

A letter from Dr. L. F. Elston, requesting readmission to the Society was read and referred to the Board of Censors. The Secretary was instructed to obtain any necessary information from the American Medical Association.

A letter from the American Medical Association concerning the distinction between Members and Fellows was received as information.

The President called attention to Chapter V, Section 2, of the By-Laws of the Society concerning the payment of dues.

The Scientific Program was then taken up.

Dr. R. C. Bruce, President of the State Medical Association, was introduced by Dr. Smith. He expressed his pleasure in visiting the Society, and then read an interesting paper on "The State Medical Association."

Dr. E. A. Hines, Secretary of the State Medical Association, after being presented by Dr. Smith, made some complimentary remarks concerning the President. He then made a talk on "The New Pharmacopoeia and Simplified Therapeutics for Every Doctor."

This was discussed by Dr. W. H. Zeigler.

Dr. Cannon then presented to the Society Dr. Paul D. White, of the Massachusetts General Hospital, Boston, who made a talk on "Diseases of the Heart Muscle."

This was discussed by Drs. Cannon, Lynch, R. Wilson, and W. A. Smith. Dr. White replied to the discussion.

The President thanked the several speakers for their talks.

The meeting then adjourned.

Respectfully submitted,

J. I. Waring, M.D.,
Secretary.

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND. M.D., F.A.C.S., CHARLESTON, S. C.

TONSILS AND ADENOIDS

Dr. I. W. Voorhees, The Eye, Ear, Nose and Throat Monthly, June, 1936

Recently, in the morning mail, came a letter which seems fairly to represent what is in the mind of every parent concerning removal of tonsils and adenoids, but which seldom becomes so articulate:

"Dear Doctor:

Our pediatrist, Dr. Blank, referred us to you for the removal of Junior's tonsils, etc.—At examination two days ago, you told my wife that an operation was imperative. Before going ahead with it, I have a few questions to ask. I wish to know the dangers, the probable result, the cost, the hospital arrangements, nursing needs and whether the mother can remain with the child over night. I believe tonsils were put there for a purpose and should be left alone. Don't they die from this operation sometimes? A friend of mine had a tonsillectomy done on his child some months ago (not by you) and the boy had a hemorrhage and a terrible time generally. The father states that after all this, the tonsils are still present. How can this be? I shall await your kind reply.

Yours truly,

JOHN SMITH."

Mr. Smith's letter is of vital concern to parent, surgeon and child. Therefore his letter was answered at length.

(Reply)

Anxious Parent:

I am the surgeon who is to be entrusted with arrangements for the operation on your only son, and with his after-care until well. You could have found a hundred like me within shooting distance of your office. I say this in order that you may not consider me boastful or as one seeking self-aggrandizement. I am trying, merely, to answer your queries.

You feel, of course, a deep anxiety. This is human. I have felt just as you do under like circumstances. But, if the anxiety is yours, the responsibility is wholly mine. This precious son when going down into the valley of unconsciousness, puts his life entirely in my hands. Whatever happens to him during the two weeks from operation to dismissal will be "up to" me. I shall receive the blame for any untoward happening no matter whether it be under my control or not. In other words I am expected to have 100 per cent success. As a surgeon, I have sworn to do all that is humanly possible for those in need of my services, come what may. The only real satisfaction I get out of my profession is to see ailing people get well. If I fail in this case to accomplish what you and I both expect, then I am defeated, and all my training and experience have gone for naught insofar as this patient is concerned. Perhaps you think that your son is only "just another case";—that I do not feel the flesh-and-blood quality of my task;—that I am like an artisan working on a length of pipe or a block of wood. —This is true only insofar as the technical part of the job is concerned; for while I am at work, there must be present no emotional or other disturbing element. But when all is over and the tension of the operating room is relieved, you may see the light of joy not only in a surgeon's face but in the faces of all who have aided and assisted him in the highly important task. Every one of my colleagues everywhere can tell you that there is no surgeon living who does not take his responsibilities to bed with him. While walking in the street or riding in a car or ascending in an elevator, if the surgeon has a very ill patient under his care, he is turning over in his mind various plans for relief of pain, and for completely successful healing.

To you of the public, a surgeon is one who cuts mortal flesh with a knife, and if you are ignorant of his work or do not like him, he is merely a "butcher," the unkindest epithet that can be applied to one who goes about trying to do good. There are many untoward events which may militate against harmonious healing. That is why no physician can every "guarantee" a cure. Perfection no more exists in medicine than in millinery or mining. Fortunately, most incidents which disturb the orderly procedure

in an operating room are trivial, but occasionally they are serious, or even fatal.

I venture to say that a death on the operating table is one of the most shocking and unforgetable experiences in professional life, and more to be dreaded than corporal punishment or public disgrace.

But to get on with the story. You know nothing of my qualifications, and so I must tell you that all surgeons in these days are obliged to go through a prolonged period of training and experience. Years of work in clinics, watching master hands as well as using your own. "Labors of love" done in the name of "sweet charity" have brought a dividend of added experience and greater assurance in attacking surgical problems.

Now, your boy is a mouth breather. This means that he does not breathe through his nose as he should, and when he lies down at night, dust-laden and germ-laden air is inhaled into his lungs, causing a dry throat, coughing and bronchial attacks. Moreover, a lack of proper oxygenation in the lungs, makes for mental dullness, no matter how bright a boy may be by nature.

But, let us suppose that you are going to turn your back on the diagnosis and refuse to believe what both your own physician and I tell you. Then, let us say that out of a clear sky your boy comes home one day walking a little lame. You think he is shamming, but he says his leg hurts him. Well, he has been playing basket-ball at school a great deal, and maybe that accounts for it. When called in, your doctor finds a rapid heart which he thinks is somewhat enlarged. There is a low grade fever of 101 degrees F. The boy has not been eating well for a week, preceding which he complained once or twice about sore throat. An X-ray examination of the leg and chest is made. The leg shows nothing, but the heart is about one-third larger than normal. To bed the boy goes, not for a day or two, but for five long, weary months with a nurse in attendance and an ice bag on the cardiac region for two hours out of every four while awake. There is definite evidence of rheumatic fever. Every consultant who comes in puts his finger, so to speak, directly upon the tonsils as the site of origin of the infection, which is no longer limited to that region only. The scene of action is now centered in the heart. It is inadvisable to remove the tonsils, but even if they were removed during the acute cardiac attack, which is a dangerous procedure, the disease is no longer in the tonsils only, and no operation now will be effective in saving the heart.

This is no mere hypothetical case. Many a little patient has gone through just such an experience and has come out of it with permanent damage to his heart. This means that during his whole life he will never again be allowed to play basketball or tennis or foot-ball or do track running. Life insurance companies will turn him down or if they insure him at all, it will be at a very high premium rate. Here is a "cardiac cripple" who might have been saved from lifelong invalidism.

You claim, like many others, that the tonsils "were put there for some good purpose." Very true, but we are not quite sure of the purpose. After they have taken up and resisted all of the germs they can fight against, they cease to be effective agents of defense and become instead a machine gun "nest" which must be cleaned out if the battle in other sectors is to be fought successfully.

Hemorrhage may and does occur. It cannot be entirely prevented. But with well-trained assistants bleeding is stopped at the table, and the patient is kept there until the operative field is "dry." To be sure, it may recur during the first 24 hours, which explains why the patient must be kept in hospital where the house staff is constantly on duty to care for just such emergencies. After 24 hours, the likelihood of hemorrhage is so minimal that it is safe to allow the patient to go home.

Like many other people, I note that you "hate" the idea of sending anybody to a hospital. This prejudice is not well founded for, if you are really ill, a hospital is the only place where you have the advantage of X-ray, laboratory tests and special technical procedures such as blood transfusion. However, I do agree with you that too many people are sent to a hospital for minor illnesses which could be well taken care of at home. Surgery, whether major or minor, is much more conveniently done in hospital, but mothers sometimes object to hospital rules which prevent their staying with the child over night. But if every mother were allowed to do this, there would soon be as many

adults as children, and this would disturb the smooth working of hospital routine.

You tell me about a friend of yours who said that he had "gone through this thing" with his boy and that he is still a mouth breather. Recurrences do take place in the experience of the very best surgeons, but not ordinarily.

Your friend says that his boy is still a mouth breather. That may be due to habit or to some disease of the nose which can be corrected. Involuntary urination, especially at night, is also common. And so you see that the matter is not so simple as it seems.

The common idea is that almost anyone can remove tonsils and adenoids is true only in a sense, but there are some among us who lack surgical sense.

And now we come to the point you raised which many of us on both sides of the fence, physicians and patients alike, would prefer not to discuss. Many surgeons are so averse to "talking money" that they employ secretaries to fix the fee. The fee can always be arranged to the patient's satisfaction.

It is better, as a rule, to have a child operated upon preceding a vacation period.

WOMAN'S AUXILIARY

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ANNUAL REPORT OF THE PRESIDENT OF THE AUXILIARY TO THE SOUTH CAROLINA MEDICAL ASSOCIATION, APRIL 22, 1936

By Mrs. Clarence E. Owens, Columbia, S. C.

Your State President submits her annual report with mingled emotions of gratitude for the remarkable cooperation with which her efforts have been supported, with gratefulness for the loyalty and understanding accorded her by the members of the South Carolina Auxiliary, each one of whom she is desirous of believing is her friend; with pride that really constructive progress has been made and with joy in her heart that she has been privileged to serve as your President and afforded opportunity to develop a keener understanding of the aims and problems of the Auxiliary and establishing to her own satisfaction an assurance of its value to the Medical Association.

That all of the emotions are justified you have learned from the splendid reports of your State Officers and county Presidents which recounted the fine type of work being done in South Carolina, therefore, it remains for your President to present an account of her personal activities in the administration of your affairs during the past year.

At the Fall Executive Board Meeting, held in Columbia, the President stated her inability to conduct the duties of her office at that time and urged that she be relieved. A canvass in succession was made of the state officers with the outcome that no one was available who would consent to meet the emergency. To avoid confusion and the possibility of another silent year, the Executive Board permitted the President to begin her duties on the first of January with the promise that by concentrated action she would try to accomplish as much in four months as would ordinarily have been prolonged in leisurely fashion over seven. In consequence, the first of 1936 found her earnestly at work with the Corresponding Secretary contacting county presidents.

To them was outlined the major objectives of the year which were the promoting of health education, expansion within each unit as well as within the state, doubling of the Student Loan Fund, and organizing each Auxiliary along lines corresponding to those of the state. Detailed information as to the duties of each chairman was sent with a request for their names. Some of these returns were late coming in, but the results were very gratifying, especially in view of the fact that some memberships are so small as to necessitate each one holding two and sometimes three positions. With the information available each national chairman under whom South Carolina has serving a State Chairman was furnished the name of the latter, the names of the county chairmen and assurances of good wishes and support from our state. A few quotations will suffice to show how well these letters were received. In the News Letter published under the supervision of Mrs. J. P. Simons, Chicago, National Chairman of press and publicity whose husband she proudly asserts is a grandson of Dr. Simons of Charleston, appeared the following:

"The President and members of the Board of the South Carolina Auxiliary have shown a spirit of friendly co-operation toward all the work of the National Auxiliary. In a recent letter the President said: 'Rest assured that you have the best wishes of the South Carolina Auxiliary and the promise of personal co-operation with any project you wish advanced'."

From Mrs. David S. Long, Harrisonville, Mo., National Chairman of Public Relations, "I received your gracious letter of January 22nd, and I appreciate the fine friendship expressed from South Carolina, etc."

From Mrs. S. C. Red, Houston, Texas: "Many thanks for your promptness and for South Carolina's splendid cooperation."

From Mrs. V. E. Holcombe, Charleston, W. Va., National Chairman of Health and Program, who also boasts lineage in South Carolina have come numerous friendly letters of appreciation for the support of her program. Last and best have been those communications from Mrs. J. Bonar White which imbued your President with a longing to secure her attendance as our guest speaker even though *our* gain has been Georgia's loss. The administration presents her presence at this convention as one of its main accomplishments. An excerpt from the News Letter expresses our sentiments:

"It would be a privilege and an inspiration to Auxiliary members to attend the Annual Auxiliary Meeting which will be held at Greenville, S. C. April 21-23. Mrs. J. Bonar White, first Vice-President and Chairman of Organization of the National Auxiliary, will be the guest speaker. The Press Chairman suggests that all Auxiliary members read Mrs. White's article on Auxiliary Organization which will appear in an early issue of the BULLETIN of the AMERICAN MEDICAL ASSOCIATION."

In January to the National and Southern Presidents were sent greetings and assurances of support followed in March by invitations to attend this convention. It is regretted that neither could accept. Programs were sent to them, to the president of the American Medical Association and to all previously contacted national chairmen and many letters of commendation have been received in return.

As an expression of favor to South Carolina your President was extended the chairmanship of the Budget Committee of the Southern Auxiliary but could not serve. The same data which was sent to national chairmen was supplied to state chairmen with a promise of willingness to assist in any manner necessary and with an assurance of confidence in their ability to execute the duties of their offices.

Following an offer to visit any county units where service could be rendered your President spoke on organization before the Ridge Auxiliary, assembled at the home of Mrs. Price Timmerman in Batesburg and found the unit completely organized and functioning actively. An invitation from Mrs. P. M. Temples took her to Spartanburg for its January meeting and an effort which she hopes was successful was made to stimulate interest. Regular attendance has been possible at the Columbia meetings. It is regretted that an invitation to speak on the subject of Flower Arrangement for the benefit of the Student Loan Fund under the auspices of the Sumter Auxiliary could not be accepted and that a necessary trip to Greenville several days prior to its April meeting prohibited a return visit in response to an invitation to attend

the April meeting from the President, Mrs. T. R. W. Wilson.

However, two trips were made to Greenville, the first to attend the Student Loan Fund committee meeting and the second as the guest of Mrs. Wilson for a conference with her and the Convention Chairman, Mrs. J. L. Sanders, to discuss plans for this convention.

As a marked step of progression and one of its outstanding achievements, the administration cites the formation of a new set of rules, necessitated by five years of growth, to govern the use of the Student Loan Fund and a second set to govern the committee controlling the fund. Conducting the duties of the committee will be greatly facilitated by the adoption of these rules. The Fund at the close of the convention at Florence, April 18, 1935, after four years, amounted to $569.45. Following our slogan "Double the Student Loan Fund" on this date, April 22, 1936, it has grown in 1 year to $1083.93. Assisting your chairman of organization, your President went to Newberry, twice organized, twice disbanded, in an effort to interest them again, but failed to furnish sufficient incentive. She went also to Abbeville, delayed in organization while a futile attempt was being made to form a unit in nearby Greenwood in hope of contacting both towns during the same trip, thereby saving time and expense. Your president made desperate personal efforts to hold Anderson and Florence, but was unsuccessful.

A report of the year's work of South Carolina was compiled and forwarded some months ago to the Southern Auxiliary and the one accounting to the National Auxiliary will be sent immediately following this convention. An earlier report would not have given due credit for work done in the state.

The southern section of the News Letter sent out by the National contained an account of interesting work being done in the state. The request for the article came while your state chairman of Press and Publicity, Mrs. Clay Doyle, was in Florida, so it was the pleasure of your President to edit the news items and submit them for publication.

She compiled your programs for this convention. There are some errors, some omissions, hers and the printer's. For these she asks your pardon.

Too much value cannot be placed upon the benefits derived from the space allowed us in the South Carolina Journal by Dr. E. A. Hines, our tried and true friend. The necessity for its full use whenever it is available is evident to all who read the Journal. The President and the Executive Board extend to him sincere thanks for space in the November, January, February, March and April issues and for his continued interest in the affairs of our organization. When the beautiful Sims Memorial was vandalized during the past winter, it was he who brought the matter to the attention of your President who in turn communicated with Mrs. H. M. Stuckey, the Sims Memorial Chairman, with the result that Mr. Alex Salley, the State Historian and your President presented petitions to the Finance Committee of the State Legislature for funds sufficient to cover restoration. A letter from the Clerk of the Committee assured the appropriation in so much as the memorial was presented to the state and is now its property.

It may be of interest for you to know that a close study of conditions in other states which compose the National Auxiliary reveals that South Carolina compares favorably with the large majority. The units and members number about the same as in other states of like size. The programs cover similar territory, the same problems which confront us, confront many others and nearly all have some form of philanthropic interests similar to our Loan Fund.

Since coming to Greenville the pre-convention meeting of the Executive Board has been held and the President's recommendations have been covered by those brought to you and voted upon by the House of Delegates. For your information the following statistics are presented:

1935—Twelve units, one of which, Anderson, was entirely inactive except for the payment of dues for ten members.
The Coastal and Florence Auxiliaries were organized. There were 225 members in the state. Charleston disbanded.

1936—Anderson and Florence have definitely disbanded.
Abbeville has been added so that there

are now eleven units in healthy condition in the state. In support of our Membership Campaign there has been a substantial increase in the units already established totaling 255 or a net gain of 50 members.

Since January 1st, your President has tried to the best of her ability to fulfill the promise for concentrated action made to the Executive Board and any failure to do so has not arisen from an unwillingness to serve. Bear in mind that there are no minutes prior to 1931 to be found, so securing information has been very difficult. If she has measured up to your expectations she will descend from office a very happy person and if she has failed, please be lenient.

To those who have helped make this report possible, go heartfelt thanks. For the Greenville Auxiliary which has supplied a glorious setting for the close of the administration, there is only commendation of the highest order.

And now, will you permit a lapse of speech into a more personal form while I acknowledge with humility and deepest gratitude which brings a lump to my throat the whole-hearted support and many courtesies accorded me by my associates—the members of the Auxiliary to the Columbia Medical Society. For the enthusiastic manner in which they supported my ambition,—by a contribution of $250 to the Loan Fund and a membership drive, resulting in an increase of 19 members, a 100 per cent rating, with the exception of four eligibles—I thank you. For the lovely luncheon at which they entertained the Executive Board after its November meeting—I thank them; the gift of our beautiful convention programs presented in compliment to me touches the innermost recesses of my soul. Could any symbol of friendship make a recipient more humble?

And so, feeling that only the surface has been scratched, I bid you fare-well as President of the Medical Auxiliary of South Carolina, for 1935 and 1936. May an all-kind Providence watch over you until we meet again and direct you along the benevolent way which you are following.

AUTO OXYGEN TENT

To the Editor:

An idea occurred to me the other day and I have thought I would pass it along. Oxygen tents are rather expensive. A better and cheaper one can be had so easily. I think any one can pick up an old automobile body almost anywhere and convert same into a neat little house with little or no expense. Hospitals can sooner or later secure the body of some costly machine and "so"—as Dr. Ochsner used to say have a room though smaller than the patient's at home yet much neater and I believe much superior to the tents which cost money. The oxygen and the oxygen appliances are all that will cost the hospital and patient real money. The old automobile body treated now and then to a coat of paint will live certainly as long as the home and hospital judged by the old fellows we see as a constant eye sore along the highways.

G. P. Neal, M.D.

Greenwood, S. C.

WANTED: Place as office assistant in Doctor's office. Have had experience in meeting people in public offices; can do steno-bookkeeping work. Write Faith Clayton, 1509 Lady Street, Columbia, So. Car.

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PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

November 1, 1935

ABSTRACT NO. 299 (26087)

Service of Dr. W. A. Smith

Student J. Gaston (reading):

A 21-year-old negro male, laborer, admitted 4-14-35, died 4-15-35.

History (apparently gotten with difficulty): "Rheumatism" in 1928. Pain and oppression first appeared in chest and stomach 6 months before admission, and has continued. Has had swelling of lower extremities and dyspnoea, unable to elicit duration. Recently discharged from CCC camp because of "heart trouble." past personal history and family history appear irrelevant. Questionable history of lues. Diet adequate.

Examination: Temp. 97, pulse 108, resp. 40, B. P. not obtainable. Of good general stature and fairly comfortable. Pupils pinpoint and do not react to light. Tongue coated, few teeth carious. Tonsils slightly injected, not enlarged. Thorax: Expansion greater on right side. Breath sounds exaggerated in right chest, few rales in right chest posteriorly. Also exaggerated in upper portion of left chest, flatness in apex. Breath sounds diminished in lower left chest, dullness posteriorly on left. Heart: "Markedly enlarged." Systolic murmur at apex. Hear rate rapid, action weak. Abdomen: Distended and tender. Liver margin 4 inches below costal border. "Mass in upper left abdominal quadrant." Dullness in flanks. No edema of extremities. Neurological apparently normal.

Laboratory: Urine—no specimen obtained. Blood (4-15-35): Hb. 103 (D); RBC 5,610,000; WBC 18,000; polys 86 per cent, lymphs 10 per cent, monos 4 per cent. Urea N (4-15-35) 19 mgs. Blood Kolmer and Kline: 4 plus, 3 plus. Culture of fluid from left chest (4-15): negative, both on routine media and for t. b. X-ray of chest (4-15-35): See chart.

Course: Temp. rose to 101.2 one hour after admission, then gradually fell to 96.5, just before death. Pulse rate varied from 95 to 120, each reading recorded with a question mark. Resp. 40, 30, 24, 26, 32. Two other examiners unable to get B. P. Patient ceased to breathe during a subsequent examination. On attempting to inject adrenalin into the heart, purulent fluid was aspirated. Pronounced dead at 12:25 P.M., 4-15-35.

Dr. Robert Wilson (conducting): Mr. Bernstein, will you size up the situation for us?

Student Bernstein: One of the first things noted in this case is the history of rheumatic fever in 1928, and the subsequent appearance of cardiac symptoms. The effect of rheumatic fever upon the heart is well known. On examination the heart was found to be enlarged, but the later note on the abstract of aspiration leads me to believe that there was fluid in the pericardial sac, and that the cardiac enlargement was of pericardial type. The chest findings are probably the result of pulmonary compression by the enlarged pericardial sac. I would interpret the failure to get a blood pressure reading as indicative of myocardial failure. The flatness in the apex makes me suspect a pneumonia there at the time of admission to the hospital. The mass in the upper left abdominal quadrant may be the margin of the liver pressed downward by the pericardial effusion.

The laboratory findings do not help us much. In fact the history is also of little help except for the record of rheumatism. The patient was probably too sick for a complete history to be taken, and he died so soon after admission that a complete work-up could not be done. My impression is that he had a pancarditis of rheumatic origin, and that death was from myocardial failure and from a pneumonia.

Dr. Wilson: The way this abstract is presented leaves some doubt in my mind as to whether the "rheumatism" was actual rheumatic fever. But tell us more about the "rheumatic heart." And how do you explain the pinpoint pupils?

Student Bernstein: His cardiac findings, with a valvular murmur, suggest that he had a

lesion of the mitral valve, and that would probably be of rheumatic origin. The only evidence we have of involvement of the myocardium is the fact that the myocardium was failing. The pericarditis appears to have been a purulent effusion. That would be unusual in rheumatic fever, but I believe that it was also rheumatic.

I do not believe that the pin-point pupils need be correlated with the clinical picture. The probability is that he was given morphine for the relief of pain.

Dr. Wilson: Let's see if anyone agrees with you. Mr. Glenn?

Student Glenn: His history of rheumatic fever seems to me to be fairly clear. And cardiac decompensation in a man of this age might well be on the basis of rheumatic disease of the heart. The note about the aspiration of purulent fluid from the heart leads me to believe that he also had a purulent effusion in his pericardial sac. The pain and the oppression in the chest can easily be explained on that basis. I believe that he also had a pneumonia.

In the laboratory findings, the high hemoglobin and red cell count can be explained on the basis of a failing heart. The leukocytosis can be explained on the basis of the pneumonia or the purulent pericarditis. He was not in the hospital long enough for his temperature curve to be highly significant, but it seems to suggest a severe infection.

Dr. Wilson: Why do you assume a pneumonia?

Student Glenn: The breath sounds were exaggerated on the right, suggesting that there was some loss of functioning tissue in the left lung. The diminished breath sounds, dullness and rales there suggest consolidation. The flatness at the apex is quite hard to explain. Of course the same findings may go with pleural effusion or with atelectasis. As an afterthought, the history of lues, the substernal oppression and pain, the altered pupils and the chest findings could all be explained on the basis of an aneurysm of the aorta, with compression-atelectasis of the lung. I think that pericarditis is a much more likely diagnosis, however.

Dr. Wilson: Mr. Wallace, will you discuss the case?

Sudent Wallace: I agree with what has been said with regard to the chronic heart disease, probably on a rheumatic basis. But a purulent pericarditis is certainly not to be expected in rheumatic fever. A much more common cause of purulent pericarditis is the pneumococcus, extending to the heart from the lung and pleura. While there is nothing in the history to suggest a pneumonia, still there is nothing to make it seem unlikely. As the pericardial fluid increased rapidly in amount it would tend to prevent the heart from filling during diastole, the effect described as "cardiac tamponade," and death would result from circulatory failure. The inability to get a blood pressure reading means that there was no pulse pressure; this would be expected when tamponade became extreme.

I would like to see the x-ray of his chest.

Dr. Wilson: Will you interpret the film for the rest ofus?

Student Wallace: The heart is definitely enlarged and appears bottle-shaped. This tends to confirm the impression of pericardial fluid. There is some hazy clouding of the left apex which might well have been pneumonia.

Dr. Wilson: In Dr. Rudisill's interpretation, as recorded on the chart, he says that the enlargement of the left side of the heart is very suggestive of pericardial fluid, but that the right border of the heart shadow is not as characteristic. He seems rather inclined toward that diagnosis, however.

There are several things about this case that must be considered. While the history is certainly inadequate, there is definite evidence of heart disease. In the face of an inadequate and unsatisfactory history, the examination must be particularly careful. The chest findings suggest pleural effusion rather than pulmonary consolidation. The enlargement of the heart shadow suggests pericardial fluid, and the aspiration further corroborates that. It is concievable that the aspirated fluid came from the pleural cavity; in fact that was the opinion of the interne who aspirated the fluid, and the "chest fluid" recorded on the chart is the one obtained on aspiration. If we decide that pleural and pericardial fluid were present, the background for these two must be considered. The appearance of the fluid is described as "purulent." Rheumatic fever, which could give rise to both pleural and pericardial fluid, would

almost never be purulent, and would hardly appear so. Fluid from a tuberculous pericardium would also not be purulent, but it would appear so, at least is many cases. I do not believe that the fluid was actually purulent, as the culture was negative. The negative culture for tubercle bacilli is of little importance. The vagueness of the history of rheumatic fever also tends to exclude that diagnosis. I believe that a diagnosis of tuberculous pleurisy and tuberculous pericarditis is more likely.

Dr. Lynch: There are two conceptions as expressed by members of the class that I would like to comment on. The first is the expression "purulent effusion." The term "effusion" should only be used in a case of passive accumulations of fluid. When an inflammatory process is meant some such term as "exudation" should be used, as a "purulent exudation."

The second is the use of the term "purulent" itself. That term should not be loosely applied to a cloudy yellowish fluid, but should be reserved for those cases in which it is known that the clouding is due to the presence of leukocytes. This loose usage of terms was one of the reasons for the difficulties in this case.

The fluid was a yellowish fluid with flakes of fibrin in it. It was not a purulent pericarditis, but a tuberculous pericarditis. The proper descriptive term for this fluid is "sero-fibrinous."

There was about 300 cc. of this fluid, greatly distending the pericardial sac. Both visceral and parietal layers of the pericardium were greatly thickened as you can see in the mounted specimen (demonstrating autopsy specimen). Numerous yellow areas of caseation can be noted. The state of "tamponade," as the term has been used here today, so compressed the heart muscle that the fibers appeared microscopically to be small and atrophic. There was some venous congestion in the myocardium, apparently from an inability of the coronary veins to empty. The effect of this would be to impair the nutrition of a heart muscle that is already being driven to the limit to maintain circulation in the face of pericardial tamponade. The inevitable result is circulatory failure and death.

The pericardial fluid so impinged upon the other thoracic contents that the left lung was almost completely collapsed. The pleural covering of the left lung was greatly thickened, and microscopically it also showed evidences of tuberculosis, altho the process was no longer active at the time of death. No doubt there was a tuberculosis of this lung, extensively involving the pleura. The pericardium could then become infected either by direct contact with the pleural covering, or by retrograde infection from the hilar lymph nodes.

The other lung was voluminous and normal. There were adhesions in the mediastinum that held the pericardium firmly in place against the sternum and other adjacent structures; this is the probable reason for the unusual outline of the heart shadow on the right.

Other structures at autopsy showed merely the effect of cardiac failure. The liver was enlarged and greatly engorged with blood. The spleen was about three times the normal size; it was doubtless the mass felt in the left upper abdominal quadrant.

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FACTS OF GENERAL INTEREST ABOUT X-RAYS AND RADIUM

By
HILLYER RUDISILL, JR., M.D.
Charleston, S. C.

I would like *first* to review briefly the discovery of x-rays and radium since in my experience the use of any therapeutic agent is more completely understood and appreciated if a little of its history is known.

X-rays were discovered in 1895 by Professor Wilhelm Conrad Roentgen of the University of Wurzburg Germany. Professor Roentgen was experimenting with vacuum tubes and noticed that some photographic plates, that were in light-proof containers, became exposed as from light when the vacuum tube was activated in close proximity to them. In a series of carefully conducted experiments Roentgen demonstrated that invisible rays were being emitted from the vacuum tube. Since this was the first time invisible rays had been produced Roentgen called them the "x" or unknown rays. They have since been called the Roentgen rays in honor of their discoverer.

Radio-activity was discovered by a French physicist, Henry Becquerel, in 1896. Becquerel found that ore rich in the element uranium would also expose photographic plates, when in light-proof containers, just as the newly discovered x-rays did. Further experiments with this uranium ore proved there was another and more powerful radio-active agent than uranium in the ore. In 1898 Monsieur and Madame Curie with G Bemont isolated the more radio-active substance, proved it to be a new element, and named it radium.

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Ore containing radium has been found in many parts of the world but in most cases the radium content is so small that it is unprofitable to go through the very costly process of extracting the radium from the ore.

In the extremely rich in radium ore approximately 500 tons of chemicals and 1000 tons of coal are needed to separate 1 gram (about 15 grains) of radium. Radium is the nearest thing to perpetual motion that we know. It is continually giving off three types of rays that have been designated the A, B, and G. Without any process of renewal and even when constantly used radium loses only 1-2 its strength in 1680 years.

We have so far considered x-rays and radium separately but strange as it may seem they are a sort of double first cousin if not actually brother and sister. If we disregard the A and B rays of radium, which are of little or no importance in treatment, we have left only the G rays to consider. The G rays of radium and x-rays are both members of the large physical family called Electro-Magnetic-Vibrations, waves, or rays. To this class belongs the following:

Radio or Wireless Waves.
Heat or Infra-Red Rays.
Visible Light.
Ultra-Violet Light.
X-Rays.
G. Rays of Radium.
Cosmic Rays.

These rays differ from one another primarily in wavelength and their particular and individual properties *depend* on this difference in wavelength. Wireless waves are the longest varying in length from a few feet to a mile or more. The other rays and lights have progressively shorter wavelengths to x-rays and

radium which are the shortest of all rays, having any known therapeutic value at this time—the little understood cosmic rays are slightly shorter. X-rays and G. rays are so short that a special unit had to be created for convenience in describing them. This unit, suggested by the Swedish Physicist Angstrom, is roughly 1-200,000,000 (millioneth) part of an inch. The unit is called the Angstrom and is abbreviated A. U. for convenience.

It is necessary to emphasize the smallness of x-rays and radium rays since this feature explains their peculiar and important property of penetration of material and human tissue that are opaque to visible light and other rays. In other words these rays are so small they can go through the complex microscopic structures of the human body without being stopped and absorbed. The special properties of x-rays and G. radium that make them so useful in medicine are 4 in number:

1. Penetration.
2. Photographic.
3. Flourescing.
4. The inability of abnormal tissue (particularly malignant cells) to withstand as great a quantity of either ray, as normal tissue can without being injured.

The first three properties are utilized in x-ray diagnosis: taking films and the fluoroscoping patients. The fourth property of relative or comparative resistance of healthy tissues and organs to x-rays and radium is the keystone upon which the entire structure of x-ray and radium treatments of both benign and malignant conditions is used. It is necessary here to again emphasize the similarity and to point out some differences in x-rays and radium.

A satisfactory machine to generate x-rays for treatment, including the necessary meters and measuring instruments, costs slightly upward of $5,000. At least $500 a year must be allowed for depreciation, repairs, replacement of worn out tubes, etc.

The unit of radium is called the milligram. A milligram is 1-65 of a grain and it cost about $65. To form a better idea of the smallness of this unit an amount of radium the size of an ordinary 5 grain aspirin tablet would be 333 units and it would cost about $22,000. For $5,000, therefore, only 75 units or milligrams could be obtained. I might digress to say that radium when purchase is in the form of the bromide salts and looks very much like yellowish powdered sugar. There is also slightly less than a pound of radium in the entire world of which a little more than 1-4 pound is owned by American doctors and institutions.

Too much stress on radium or on x-rays has been laid by certain writers who, not possessing both agents, have naturally tended to stress the agent that they happened to possess. The question is not one of radium versus x-rays but of the relative advantages and disadvantages of each agent. A through knowledge of these advantages and disadvantages should govern the indications and contraindications for each one. In certain conditions, or in certain phases of the same condition, radium may be preferable to x-rays and vice versa. Sometimes the two agents may be combined to advantage, and some conditions may be treated as effectively with one agent as the other, the relative advantage then being a matter of time, availability, convenience and cost. Technical considerations may also enter into the decision to use radium or x-rays, or both, in a given case.

The only real difference between x-rays and radium is that radium rays are slightly more penetrating, but it would take several pounds of radium, that is millions of dollars worth, to give off as many rays as we get from the $5,000 x-ray producing machine. If this is the case you immediately wonder why bother with radium at all. The answer is that with even small quantities of radium it is possible to better treat certain conditions and areas than with x-rays. The outstanding advantages of radium is in the treatment of cancers of any of the orifices of the body. This includes cancer in the mouth, nose, and throat—cancer in the rectum, vagina, and cervix uteri. In these areas it is possible to place small radium applicators, with no attached apparatus or electrical connection, in and around the growth. Radium properly enclosed may be left in place comfortably for long enough periods of time to give an adequate amount of irradiation. As an example of this type of treatment we treat cancer of the cervix by placing a small applicator containing 70 mgms. of radium in and against the part. The applicator is left in place for three days and

patients do not complain. To get a sufficient quantity of x-rays to a cervical cancer would necessitate large quantities of rays passing through the organs surrounding the uterus, particularly the bladder and bowel. While normal tissues can withstand rays better than abnormal tissue we would still risk injuring the bladder and bowel with x-rays while in using radium properly this danger is completely obviated.

As an example of preferable use of x-rays I may cite the treatment of cancer on the surface. Sufficient x-rays to cure most skin cancers can be delivered in 1-2 hour while a G. radium equivalent dose would require 30 hours. The final result would be exactly the same and it would be impossible to tell whether x-rays or radium had been used.

I can not completely summarize this subject in a few words but as a general rule the following is true. X-rays are used to irradiate large areas after surgical removal or radium treatment to the primary growth. The x-ray treatments are given to destroy malignant cells that may have wandered some distance from the growth and so have not been removed at the operation or destroyed by the radium. The usefulness of x-rays in this manner is definitely proven, for example 40 per cent more patients have 5 year cures following surgical removal of breast cancer when the operation is followed by adequate x-ray therapy.

X-rays alone are used very successfully in many benign conditions both skin and internal. Besides being frequently the method of choice in chronic unresponsive skin diseases the following conditions usually show a gratifying response to x-rays:

1. Fibroid tumors of the uterus.
2. Abnormal uterine bleeding from various non-malignant causes.
3. Hyperthyroidism.
4. Purpura Hemorrhagica.
5. Tuberculous infections and other pathological conditions of lymph glands.
6. Persistence or hypertrophy of the thymus.

The above list by no means even partially covers the usefulness of x-rays but enumerates a few of the best substantiated ones.

There are a few recent developments in irradiation therapy that I would like to mention before closing.

1. The G. rays of radium can be collected from the actual element, placed in sealed containers and will retain their activity for several days. These isolated rays are called radium emanation or radon. This radon can be so calculated that the initial quantity will just give the necessary number of rays so the applicator does not have to be removed from the body since it is no longer active. This is a particularly useful method of treating bladder tumors without operation. Small radium applicators can be easily introduced into the bladder through the cystoscope but they can not be removed in this manner. On the other hand radon applicators can be inserted through the cystoscope and they do not have to be removed. Since it is not necessary to remove radon it is also very useful for introducing into brain tumors and other parts of the body.

2. Large quantities of radium, several thousands units, have been collected and placed in special containers called radium bombs. Only a few of the largest cancer centers have these but they are very useful in irradiating large areas as with the x-ray tube which they approach in the number of rays given off yet retain the desired radium advantage of the rays being more penetrating than x-rays.

3. More powerful x-ray machines are being built in which the voltage activating the tube may be raised to 1,000,000 or more. Since the higher the voltage used the more penetrating are the x-rays produced these super-voltage x-ray machines approach very closely to radium rays in penetration yet they retain the x-ray advantage of a larger quantity of rays.

4. Insulated x-ray treatment tubes have recently been perfected. These can be inserted into the various orifices to give localized treatment like radium but in a much shorter period if time.

I have not mentioned these new developments with the thought of confusing you, although at best they are somewhat confusing, but to make a final emphasis of the close kinship between the two rays.

It is my humble belief that the problem of treatment of all malignant disease (except some of the rarer internal tumors and cancer in

some parts of the gastro-intestional tract) is satisfactorily solved with good surgery and the proper quantity and type of irradiation; provided the malignancy is diagnosed early. In closing I will quote from a short article of mine published in the State Journal almost 5 years ago:

That radiation does not cure the majority of neoplasms is not the fault of the method of technique. Conservatively figured at least half of those presenting themselves for treatment have potential if not actual metastases. There are occasional reports of successful radiation of secondary malignant growths but usually they are not sensitive to radiation. Aside from the lack of response they are so extensive and in such inaccessible locations that it is futile to try and treat them.

Radiation therapy, in early malignancies, offers better and a nearer specific remedy than there is for many common diseases. There will continue to be improvements in x-ray and radium technique, but the factor that will double the percentage of cures is the education of the laity and physicians to the paramount importance of early diagnosis, and immediate radiation therapy; judiciously combined with surgery.

DISCUSSION

Dr. W. S. Judy, Greenville:

I want to express my appreciation to Dr. Rudisill for bringing this subject before the society and also for asking me to open the discussion. There is very little I can say in the discussion of his paper. He mentioned the fact that there is no rivalry between x-ray and radium, which is quite true. There are instances where one is preferable to the other, but there are other instances where the combination of the two brings about the best results. I might mention carcinoma of the cervix, which is advantageously treated by the combination of x-ray and radium. Radium in the canal itself is supplanted by short wave x-rays externally for the benefit of the potentially involved pelvic lymph nodes and broad ligaments, although there is no fixation. You frequently hear laymen, and sometimes physicians, mention the fact that they approve of one of these agents and censure the other. There is never any real need of that or excuse for it. The entire thing, in my estimation, is the ease of application. If you have an inaccessible location—for instance, the tonsil region, you have to use radium; you can not get your x-rays through the open mouth. Of course, you can through the skin.

One point I should like to emphasize is that irradiation is not a treatment for terminal malignancy—a frozen pelvis, for instance. That patient is not suitable for anything but morphin, you might say.

The intent of Dr. Rudisill's paper, I feel sure, was to bring the fundamentals of radiation before the society. The man in general practice and the man who specializes in medical pursuits other than radiology is not deeply concerned with these things. In Greenville we have a set of men who, when a case is referred to me, always let me have a choice in its management.

Dr. Rudisill's paper, I think, was presented in order to bring these fundamental things before the society, and for that I wish to commend him.

PREVENTION OF LOSS OF WEIGHT IN THE NEWBORN

By

J. I. WARING, M.D.

Charleston, S. C.

I am not sure that this paper will entirely clarify its title, nor that preventing or minimizing the usual and apparently physiological loss of weight is a necessary goal in the care of the newborn infant. However, there have appeared recently a number of articles which desccribe the desirability of efforts to reduce weight loss and to improve thereby the wellbeing of the child in his earliest weeks of life, and having sufficient curiosity to try several of the measures recommended, I have put together a few figures which are not conclusive, but which offer some suggestive points.

Nearly all newborns lose weight, and lose rather abruptly, as the body discharges meconium, urine, moisture from lungs, skin and drying cord and as normal metabolism breaks down tissue. Down goes the weight, usually to stay down, until the fourth or fifth day when the mother's breasts secrete a sufficient quantity and quality of milk to yield the energy required for gain. During this period some infants become obviously dry and feverish, and show some tendency to a general sluggishness and a slower final recuperation of weight. Others are not obviously affected, even tho weight loss be fairly large.

To some observers a considerable loss or a slow start in gaining means much in the matter of the early welfare of the child. For others,

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unless the loss is very large there is no concern for the eventual improvement. All take into account the fact that when there is small loss one seldom sees the frequently alarming, even if not necessarily dangerous, symptom of inanition fever, or dehydration fever of the newborn, a development which is quite common among infants who lose a large portion of their weights.

For many years attempts have been made to obviate this initial loss, with the idea that the infant will become a more vigorous nurser and a stronger organism. It has been found that in the first few days of life the immature alimentary tract can utilize but poorly the milk of an actively lactating human breast, and that instead of gaining, infants actually lose when given breast milk from another source. Human colostrum is satisfactory, but generally in insufficient quantity to meet metabolic requirements, hard to get from other sources than the mother, and somewhat hard to imitate.

To save weight and maintain health several types of artificial feedings have been used with results somewhat variable. These have run from plain boiled water thru lactose solutions, lactose and salt solutions, to mixtures of sugar, salt and gelatin or various milk and sugar mixtures. Water alone seems less satisfactory than these solutions.

The object of the administration of all of these various mixtures has been to supply fluid and sugar available for combustion; some aim to add salt to aid retention of water, others to add further a certain amount of protein presumably beneficial to metabolic activity. While reports vary, it has appeared that under unusually good conditions certain solutions are capable of reducing the usual average loss of 8 or 9 per cent of the birth weight to between 1 and 2 per cent, with a corresponding benefit to the childs condition. Such a reduction has been reported with a mixture consisting of 6 per cent gelatin, 3 per cent dextrose, and 1 per cent salt, administered every two hours during the first 24 hours. With a mixture of 5 per cent Beta-Lactose with 5 grains of sodium citrate added to each two ounces the loss was reduced to 3. 9 per cent. With milk mixtures the reported reductions have been less, and it seems to make relatively little difference whether the milk be fluid or dry, plain or acidified, or whether the sugar be lactose, glucose, dextrimaltose or what not.

The advantage of the mixtures containing sugar is that they supply readily available and needed energy. The addition of salt apparently aids the retention of water in the infants body, and an alkaline salt is probably useful in a period of weight loss with its tendency to acidosis. The use of milk has been criticized because of the possibility of sensitizing an infant to the milk protein. Our own feeling is that anything other than the simplest kind of solution militates against successful breast feeding, and that the miscellaneous formulas carelessly given to newborn infants are productive of much harm in the way of discouraging nursing, for the bottle is generally an easier source of supply than is the breast for the lazy baby, and becomes the infant's preference. We have found too that gelatin solutions frequently give rise to diarrhea which would seem to offset its advantages. Its administration requires rather more individual care than is feasible in the average hospital nursery.

A recent comparison of several mixtures by Schroer and Laffoon (1) results in the award of the palm to a lactose-citrate mixture.

The mixtures were as shown in tables 1 & 3.

Our own results on a smaller group of infants show the inconsistency common to small statistics. The infants were all fullterm, apparently normal. That no distinction was made between the children of multiparous or primaparous mothers might be a criticism, for the former are more apt to gain early. During the past summer (1935) alternate infants as they arrived were put on the gelatin-sugar--mixture and on a mixture of dried lactic acid milk and Beta-Lactose (Lactic acid milk, dry, 5 tablespoons, Beta lactose 2 tablespoons, water 14 ounces). During the winter alternate babies were were put on water alone and on the Lactose citrate mixture.

The results were as shown in table 2.

Our small figures seem to show that as far as gain and freedom from fever are concerned nearly anything is better than plain water, that an early start toward gaining was best attained with the gelatin or milk mixtures, that the gelatin was superior in bringing about an ac-

Table 1:

Complementary Feeding	*Stock Formula*	*Amount offered each feeding (Oz.)*	*Number daily feedings (No.)*
Water		2	2
Expressed breast milk		2	6
Half skim milk, water, and dextrimaltose	9 oz. 1-2 skim milk, 9 oz. water, 1 tbs. dextrimaltose	2	6
Alpha lactose (milk sugar)	Alpha lactose 2 oz., boiled water 32 oz.	2	6
Beta lactose	Beta lactose 2 oz., boiled water 32 oz.	2	6
Gelatin Solution	Gelatin 6 tbs., dextrose 3 tbs., sodium chloride 1 teaspoonful, water q.s. ad 32 oz.	2	12
Beta lactose and sodium citrate	Beta lactose 2 oz., sodium citrate 1 dram, boiled water 32 oz.	2	6

The results were as shown here.

Table 2:

		Average initial loss		Percentage back to birth weight		
Complementary Food	*Total number of infants*	*Average birth weight (in lbs.)*	*Ounces*	*Per cent*	*On fifth*	*On tenth*
Water	70	7.12	9.3	8.2	5.7	26.6
Breast milk	20	7.08	8.3	7.3	12.5	47.7
One-half skim milk, dextrimaltose	151	7.25	8.7	7.5	13.3	57.1
Alpha lactose solution	180	7.00	6.5	5.8	12.0	51.2
Beta lactose solution	55	7.15	5.9	5.2	18.2	59.0
Gelatin solution	235	7.12	5.0	4.4	23.2	73.4
Beta lactose-sodium citrate solution	251	7.10	4.4	3.9	62.3	80.5

Table 3:

	Cases	*Percent weight loss*	*Percent gaining by 4th day*	*Percent gaining over birth wgt. by 4th. day*	*Percent with fever*
Lactose Citrate	23	4.64	43.5	17.4	21.7
Gelatin Mixture	39	4.54	82	50	20.5
Lactic Acid Milk					2.5
L. A. M.	39	4.73	82	25	
Water only	23	6.48	48	21.7	43.4

tual gain early. There seemed to be less fever with the milk, most with plain water. All the children who had the mixtures showed a smaller total loss than those who had water alone.

Our conclusion is not definite. We feel that the gelatin mixture often gives trouble, tho the figures above seem to show it is useful. We object to milk mixtures early because they make later nursing difficult and because they may sensitize the infant. We are inclined to prefer simple lactose solution or the lactose citrate solution to other forms of early complementary feeding.

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DISCUSSION

Dr. Julian Price, Florence:

I think most of us would agree that in the average baby the initial loss of weight is of little consequence. On the other hand, there are cases in which the initial loss of weight does mean something and if some simple procedure can be used by the physician in the home, as well as in the hospital, the results will be better. As Dr. Waring has said, attempts have been made to use milk in various forms, to use lactose solution, to use gelatin, etc. I feel with Dr. Waring that it is better not to use milk. Personally I have been using a solution of lactose or glucose and I find that most of the babies receiving this preparation do better than those receiving only water. Further, I find that when we give the baby some such solution there is not the temptation to put the baby to breast immediately after birth. Often the mother has had a hard labor and needs rest, and the placing of the baby to breast a few hours after birth is exhausting to the mother. A simple way of preparing a solution is to put two teaspoonfuls of lactose or glucose in six ounces of water—allowing the baby to take as much as he will.

I think the question which Dr. Waring has brought to our attention is one that most of us will dismiss lightly. I think,however, that if we could adopt some such simple procedure as he has suggested as a routine we will avert serious trouble is an occasional case.

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*PRESIDENT'S ADDRESS

By

SAMUEL E. HARMON, M.D., (Deceased)
Columbia, S. C.

Fellow Members of the South Carolina Medical Association:

I desire at this time to thank you again for honoring me with your highest position of honor and trust. I can, and do, conscientiously assure you that I did not in any way seek the office. I made no intimation that I cared for it; my friends thrust it upon me. However, I sincerely hope that I earned, and that at no time will I ever, either by word or deed, cause you any regret.

I could have gone over my records and selected some subject and have given you the benefit of my experience and results for the past twenty-five years that probably would have interested you more than the subject that I have chosen but my thoughts ran in another direction, The theme that I have selected is, "Service by the Medical Profession."

If I am to tell you what I think is the greatest need of the medical profession today I will unhesitatingly say that *organized*, cooperative, efficient service, with absolute honesty of purpose, stands out with clarity at the top of the list. As an organization we need to meet everyone on the level, to face the world with an open mind and an honest, clear conscience as to local, state, and national problems. Such an organization must not be a selfish one, or one with any unreasonable demands without due regards for all public good; but rather it must be one to carry on the lofty ideals of efficient service which have possessed our leaders in the past. Nothing but the highest type of cooperative, honest, efficient service in every way to all the people will, in my humble opinion, retain for us that ideal individual initiative that is most essential, that which has possessed our profession in the past.

It was Hippocrates, born about 450 B. C., who really rendered the first worthwhile service by giving rational medicine the general form it has today. Because of the ability of this great physician medicine is called the Hippo-

*NOTE—President Harmon died December 26, 1935 but with characteristic foresight he had completed his Presidential Address. This address has been turned over to The Journal for publication.—Editor.

cratic art. The period of Hippocrates influenced scientific and artistic life. Hellas said, "It is the epoch which brought forth the statesmanship of Pericles, the philosophy of Socrates. What Socrates was to philosophy, Hippocrates was to medicine."

Only a brief summary of his achievements can be detailed. He freed medicine from the fetters of Oriental dogmatism; he freed it from the leading strings of the priestly caste; he made it a rational science; he formulated the famous Hippocratic Oath wherein he laid down the duties of Asclepiad toward teaching pupils and patients, and defined medical ethics and etiquette.

He taught that the good of the patient constituted the only goal of medical thought and action, for "where love of mankind is there is also love of the art," and declared it impossible to attain progress in medicine in any other way than through that of experience. Each separate case of illness was to him a natural phenomenon which was to be studied with all the available aids to observation, personal and vicarious experience being brought to bear upon the case with due regards to individual peculiarities and to its affinity with nature as a whole. The patient was to be studied rather than treated as a preconceived theory to be supported. He was a true clinician with scant knowledge of anatomy and physiology; he aimed to assist nature in curing his patients, and his writings may be accurately described as a day-book of nature. He will stand as a shining example of philanthropic and professional faithfulness, a seeker after truth with full consciousness of its being unattainable.

The first real service rendered in an effort towards preventative medicine was in 1798 when Jenner announced to the world the preventative value of vaccination. It was he who rendered the first real service to civilization towards preventative medicine. We are told by historians that before the time of Jenner it was unusual to meet in London anyone whose face was not marked by small pox. There was a popular belief that one who had had cow pox was immune to small pox. Jenner put this belief to a scientific test and the result was the discovery of vaccination resulted in the abolition of this disfigurement, and a marked reduction in mortality. At the present time no one should contract small pox.

The service rendered humanity by Louis Pasteur, Joseph Lister, Robert Koch, and William C. Gorgas stands out today as brilliantly as it did at the time of their work. The service these men rendered is known in a general way by all medical men and by a percentage of laymen. Pasteur, as a result of his service rendered to mankind in working out the prevention of the development of rabies, lived to see himself honored by all the world, to become the pride and glory of France. The great Lord Lister said to Pasteur, "You have raised the veil which for centuries had covered infectious disease; you have discovered and demonstrated their microbic nature."

Dr. Joseph Lister's pioneer work in the study of the prevention of infection, and proving to the world that carbolic acid in solution would destroy microorganisms, and his paper on Antiseptic Principles in the practice of surgery marked the beginning of a revolution in surgery, all of which greatly strengthened Pasteur's theory of disease.

Dr. Robert Koch, in 1876, announced to the world that he had worked out the life history and sporulation of the anthrax bacillus. In November, 1877, he published his method of fixing and drying bacterial films on cover slips and staining them with aniline dyes. In 1878 he described the bacteria of six different kinds of surgical infection, and showed that all bred true in the test tubes and in animals. In 1881 he demonstrated his method of obtaining pure cultures by the use of gelatin plates. In 1882 he identified the Tubercle Bacillus by his special method of cultivating and staining. In 1883 he discovered the Cholera Vibrio and established its relation to disease.

About 1900 fortune favored medicine and the entire world at that time by having in control at Cuba a military governor, General Leonard Wood, a man of vision and medical training. Major William C. Gorges, another medical man of great vision, was chief sanitary officer. General Wood gave to Major Gorgas every facility for the practical application of his knowledge by the help of the Reed Board. They began the education of the world in the prevention of yellow fever and by August 1903

the Surgeon General of the Army reported that yellow fever had been stamped out in the United States territory and no case originated in Cuba for about two years.

When it was decided to dig the Panama Canal Major Gorgas was made chief health officer with the rank of Colonel. He wished to apply against the mosquito-borne diseases of the Isthmus the same sort of measures that had given him success in Havana. However, he was not a member of the Canal Commission and since his plan involved the expenditure of large sums of money he was handicapped. His superiors were not men of General Wood's training or vision; they were eminent engineers who had not learned the whole lesson of Havana, and who had their own ideas as to what was needed. Gorgas did his work for ten years under hampering restrictions that would have discouraged most men but through it all he kept his head, persisted in what he knew was the proper course, accomplished a marvel of sanitation, converted the Isthmus from a pest hole into a place where Americans and others could work safely and efficiently, freed it from yellow fever, and reduced malaria and typhoid. In this way he made possible the speedy completion of the great work of building the canal without any great mortality such as had attended previous attempts, and had marked the construction of the Panama railway of which it had been said that every tie marked a death in the construction force.

Dr. Crawford Long rendered invaluable service to suffering humanity that would enable it to be relieved of suffering conditions and disease, free from pain, when he discovered the anaesthetic properties of ether.

Our own Dr. J. Marion Sims, the father of gynecology, born and reared in South Carolina, studied medicine one year in Charleston, South Carolina, finished in Philadelphia, and commenced his medical career at Lancaster, the place of his birth. He rendered invaluable service to suffering humanity and the world that will stand out a bright halo for all time.

When he was called to see a Mrs. Merrell after she had been thrown from her horse, and was having agonizing pains in her pelvis, he remembered that old Dr. Prioleau of the Charleston Medical College had told his class that if they were ever called to see a case of sudden version of the uterus backward to place the patient on the knees and elbows, the genu pectoral position, introduce one finger into the rectum, one into the vagina, and push up and pull down. Dr. Sims did this and the patient was relieved. He realized that the position, and the air rushing into the vagina extended it by natural pressure, conjoined with the position, relieved the patient and restored the uterus. Dr. Sims said, "If I can place the patient in that position and distend the vagina by the pressure of air so as to produce such wonderful results, why can't I take the incurable Vesico Vaginal Fistula Case which seems now to be incomprehensible and put the patient in this position and see exactly what the relations are with the surrounding tissues." Fired with the idea he immediately went to a store, purchased a pewter spoon, bent the handle and made Sim's vaginal speculum that we use today, and which has never been improved upon.

He placed Betsey, the colored girl, in position and before he could get the bent handle into the vagina the air rushed in with a puffing noise dilating it to its fullest extent. Introducing the bent handle of the spoon he reports, "I saw everything as no man had ever seen before; the fistula was as plain as the nose on a man's face." Full of zeal and energy he immediately set to work making his own instruments and operating upon these poor unfortunates who had been incurable, making an effort to suture up the opening between the bladder and vagina. This was before the day of Long, Pasteur, Lister, and Koch, and he knew nothing of bacteria, infection, antiseptics, or anaesthetics. He operated upon sufferers without the aid of an anaesthetic, some of them as many as twenty to thirty times each with always a partial failure. His friends and colleagues were convinced that he was crazy and pleaded with him to cease his efforts, telling him that he would never succeed; but, being a man with undaunted courage, an investigating mind, and with the firm belief that he would eventually succeed since he realized that he could suture up other tissues of the body with success, he continued at his work. He believed that his suture material was at fault so one day while walking from his home to his office he picked up a

little bit of brass wire in the yard. He immediately went to his jeweler and asked him to make him some fine silver wire which he did, to be used as suture material.

Anarcha, the subject of his next experiment which was successful, was cured, the first case ever known to be. This was May or June, 1849. Dr. Sims made a world wide reputation for himself which is indelibly stamped in history for all time. This work was only one of his many brilliant achievements that stood out paramount; there were many other acts of service rendered by him.

Doctors Welch, Halsted, Osler, and Kelley,—four master minds in medical science, all rendered invaluable service in developing and teaching the waiting world many fundamental principles. The pioneer work performed by these men made the Johns Hopkins Medical Institution what it is today. They were real doctors and educators. They were to the medical world and that section of the country what Dr. John B. Murphy was to Chicago and the world, and what the Mayo brothers and Crile were to the middle and north west and the world. All rendered service to humanity that was disseminated throughout the entire universe and will be indelibly stamped in the annals of history in perpeiuty. Sir William Osler taught the world many fundamental principles, among them that sick people would get well in many instances if properly cared for, without nauseating drugs. Dr. John B. Murphy, the greatest man of his day was a real rounded out doctor and teacher. He taught the world many original scientific principles in the study and practice of medicine and surgery. These men that I have merely mentioned in my theme, for lack of time and space, were and are all outstanding doctors and teachers who stood at the head of their classes in rendering service to humanity in its search for truth. We cannot be their equal, nothing near it, though we can strive to emulate them in principles in doing our utmost in performing our duty with outstanding honesty of purpose and rendering service to humanity.

As a direct result of the untiring efforts and service rendered by the organized medical profession since the time of Hippocrates the span of life has been increased by reducing the morbidity and mortality rates. In 1800 the average span of life was thirty-three years. In 1855 it had increased to thirty-nine and seven tenths years, and in 1901 it had gone to forty-nine and three tenths years. In 1910 the expectancy of life had gone up to fifty-one and four one hundredths years, in 1920 it was fifty-six and three tenths years, and in 1924 it was fifty-eight and one tenth years. These figures show that eighteen and four tenths years have been added to the average span of life since 1855, and eight and nine tenths years since 1901. The death rate from all causes has decreased from seventeen and five tenths per one thousand in 1900 to twelve in 1928. This service has been rendered by the organized medical profession through hard earnest work and individual initiative of the type of men that I have mentioned along with thousands of other honest workers seeking after truth in the development of science.

The ideals of medicine are broad though very simple. High principles of service to mankind could not have made the medical profession what it is unless there had been ideals. From the very time of the founding of medicine the interest of the patient and of the public has been the first consideration in the minds of every true physician. Political domination of medicine will, in our opinion, undermine the ideals of the profession, which means that professionalism will surely be destroyed. It will destroy scientific ambition and reduce physicians to the state of hirelings, subject to the dictation of unqualified persons.

The organized medical profession must strive to retain the ideals of medicine in order that we may continue to serve effectively. I am sure that we need a house cleaning. This is a service that we owe to our patients, our profession, and our people. In good faith we should devote ourselves to our task; our profession needs it; we know that it does, and the public knows it. We are all suffering, our influence is minimized, our honesty doubted, and all because of the sins of a few or a small per cent of our own ranks. We should not longer delay the already too long deferred house cleaning. However, reforms are possible only from within. We must perform our own work. Lay men may think that a considerable number of doctors

are dishonest; they may see a percentage in action and be convinced of their grossly unethical practice, but they are helpless. Upon the doctor, who honors our profession, rests the responsibility of effecting reforms by rigid united action of the great majority. We can drive out the shysters and in doing so we will greatly improve the prestige of our great profession and perform a great service urgently needed for society. The impression that I wish to convey and indelibly stamp upon the minds of all is that we have a percentage of undesirables, in many ways, in our profession, just as there are in every profession and in every walk of life. We know them, they themselves know who they are, and the public knows them. We have been derelict in our duty in house cleaning; we should sweep before our own door; the time is now, and there is a way. Any honest constructive effort made by the majority of the organized medical profession can be developed, accomplished, and maintained. Suggestions for rendering this service are contained in the following paragraphs. I quote in part from the report of the Judicial Council of the American Medical Association for June 1935.

Public confidence in our avowed declaration for medical control over things medical cannot be successfully cultivated and maintained unless we exclude or remove from the ranks of our organized profession those who ignore our ethical code,especiallyas it applies to the true professional spirit in our relation with each other and with every patient. It is apparent that the very democracy of our existing set-up may become involved unless our county and state societies rapidly develop to meet adequately local situations arising from the professional activities of a small but thoughtless or indifferent proportion of numbers. If the societies will not exercise their prerogative or discharge their duties in this connection it will become advisable to extend the disciplinary function now resting with the county societies to the state association, and possibly to the national administration. When people, laymen as well as members of our profession, realize that the principles of medical ethics are the basic principles of honest fair dealing and that their observance is necessary to the best interest of the whole people, laymen as well as the members of the profession, medical practice will have taken a long step upwards. Medicine will have more dignity and authority and people will be better served.

The surest and most effectual way to purge and purify our profession and the performance of the healing art in any way is for the majority of those who are deeply interested in clean, efficient, scientific medicine to organize solidly behind a constructive move to see that only hand picked men who are eminently qualified in every way are chosen for officers of all associations, also members of all boards and committees, including local boards of health and health officers. Members of hospital staffs should be selected on their worth and ability to render real honest, constructive, efficient service, and not for their congeniality and popularity either personal or political.

The creation and enforcement of laws to make possible that all medical affairs shall be under the control of one scientific board in each state is needed.

All applicants who apply for license to practice the healing art should pass a successful examination on all basic science subjects.

All who practice the healing art should be re-examined periodically on all clinical subjects such as diagnosis, practice of medicine and surgery, gynecology, obstetrics, and pediactric; the reason for this is obvious to all.

Reverence

The following is a Sunday Morning Prayer composed by Lieutenant Colonel Clayton E. Wheat, former chaplain of the Military Academy, West Point, that I have transformed to fit our profession:

"Oh God our Father, thou searcher of men's hearts, help us to draw near to Thee in sincerity and truth; may our religion be filled with gladness and may our worship of Thee be natural.

"Strengthen and increase our admiration for honest dealings and clean thinking; suffer not our hatred of hypocrisy and pretense ever to diminish, encourage us in our endeavor to live above the common level of life, make us to choose the harder right instead of the easier wrong, and let us never be content with a half truth when the whole can be won; endow us with courage that is born of loyalty to all that

is noble and worthy, that scorns to compromise with vice and injustice and knows no fear where truth and right are in jeopardy.

"Guard us against flippancy and irreverence in the sacred things of life. Grant us new ties of friendship and new opportunities of service, kindle our hearts in fellowship with those of cheerful countenance and soften our hearts with sympathy for those who sorrow and suffer. May we find genuine pleasure in clean and wholesome mirth and feel inherent disgust for all coarse minded humor. Help us in our work and in our recreation to keep ourselves physically strong, mentally awake, and morally straight, that we may thus better maintain the honor of our great profession untarnished and unsullied and acquit ourselves like men in our effort to realize the ideals of our noble profession in doing our duty to Thee and to our country; all of which we ask in the name of the great friend and master of men. Amen."

Let us live not for ourselves alone and the present, but for the greater and more intelligent life of the future; not for myself but for the truth that in life I have spoken. Not I, but the seed that in life I have sown, shall pass into the ages. All about me shall have been forgotten save the truth that I have spoken, the things I have done.

REFERENCES

Dr. Victor C. Vaughan President of A. M. A. address 1914.

Dr. Olin West Secretary and General Manager of A. M. A. address 1932.

Dr. E. Starr Judd address Public Health meeting 1932.

Wilmer Krusen M. D., D. Sc., L. L. D. talk on science.

Autobiography Dr. J. Marion Sims.

Biography of Dr. William Stewart Halstead by Dr. W. G. MacCallum.

YORK PHYSICIANS IN SOCIAL MEET

One of the most enjoyable meetings of the York County Medical Society held in years was staged Friday, July 24, at Sharon with Dr. J. H. Saye and Dr. C. O. Burrus, as hosts to the visiting medicos. Wives of the physicians were in attendance, as the meeting was of a semi-social nature.

Speakers of the occasion were Dr. R. M. Pollitzer and Dr. Robert C. Bruce of Greenville, and Dr. S. H. Shippey of Rock Hill. Doctor Bruce is President of the South Carolina Medical Association. The talks were not devoted exclusively to medical topics but were broad enough to interest the entire audience.

At the close of the meeting, which was held in the Sharon high school the medicos were invited outdoors where a spread of dainty delicacies awaited them.

Practically all the medical men of York County attended the meeting. Physicians from out of the county included: Doctors Allen, Moore and Miller of Charlotte; Glenn of Gastonia and Wylie and Young of Chester.

Eastern Carolina Medical Assembly, Ocean Forest Hotel, Myrtle Beach, S. C., June 23rd, 1936, 3:00 P. M.

Pernicious Malaria in Children, Dr. Julian Price, Florence, S. C.

Factors in Mortality in Acute Appendicitis, Dr. George H. Bunch, Columbia, S. C.

Fractures of The Lower End of The Humerus, Dr. A. R. Shands, Duke University, Durham, N. C.

Cerebral Thrombosis, Dr. Walter R. Mead, Florence, S. C.

Maternal Mortality in South Carolina, Dr. Robert E. Seibels, Columbia, S. C.

Discussion, Dr. J. A. Hayne, S. C. Board of Health, Columbia, S. C.

Dinner—Dance.

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AUGUST, 1936

DEATH OF DR. D. M. CROSSON, PAST PRESIDENT SOUTH CAROLINA MEDICAL ASSOCIATION

In the passing of Dr. Crosson of Leesville, Lexington County, the South Carolina Medical Association loses one of its oldest members and one who had been signally honored in organized medical circles and in many other spheres of activity. Dr. Crosson was a charter member of the Lexington County Medical Society. He served three times as State Senator and it was during this period of his professional life that he probably accomplished his greatest work in behalf of organized medicine. It was during this period that the State Medical Association was very active in its opposition to various cults securing legal status in the State. Senator Crosson was a militant defender in behalf of organized medicine along this line.

Doctor Crosson was born in Prosperity, September 29, 1858, was educated at Erskine college and at the Medical College of the State of South Carolina, receiving his degree at the University of Tennessee. He had practiced medicine in Lexington county since 1880.

Dr. Crosson took particular pride in the fact that during his service in the general assembly he was the first advocate of paved roads across the state. He was a staunch Democrat and always took a prominent part in county and state politics, having served Lexington for eight years as county chairman. He served six terms as mayor of Leesville and then refused to offer again for re-election. He was also actively interested in agriculture and identified himself closely with every leading farm movement of county and state.

He was a student of economy and recently served as president of the Lexington Farmers and Taxpayer's League.

PIEDMONT POST GRADUATE CLINICAL ASSEMBLY ANDERSON, SEPTEMBER 8, 9, 10

Efforts at post graduate courses have been made in South Carolina from time to time by the Medical College and by the State Medical Association but in 1935 a post graduate course was started at Anderson as a result of the obstetrical post graduate courses conducted throughout the State by Dr. J. R. McCord of Atlanta under the joint auspices of the Children's Bureau of the U. S. and the State Medical Association. The first attempt was a marked success and it is expected that the second one will be even a greater success.

The general plan follows that of last year, that is, the general practitioner will be kept in mind and courses arranged in Internal Medi-

cine, Pediatrics and General surgery. Distinguished professors from the Medical College, Charleston, from Emory University, Atlanta and several others who have had large teaching experience will constitute the faculty.

While the name may have a local bearing it is intended that these courses shall be of state wide scope, indeed shall extend to the surrounding states. The facilities at Anderson are ample to take care of a large crowd. The Anderson County Hospital and its new nurses' home offer an ideal setting. The time of year would seem to be quite suitable for medical men to relax a bit after the strenuous summer practice and spend the three days at Anderson. The officers wish to extend a cordial invitation to every doctor in South Carolina to participate in these post graduate courses.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 310(29451)
February 14, 1936
Case of Drs. Richards and Prioleau

Student Zalin (reading):

A negro woman, 55-65 years of age, admitted 7-1-35, died 10-12-35.

History: Onset 3 weeks before admission with progressive swelling of abdomen. Several days before admission general weakness became apparent, and vomiting began. Continued to vomit almost all food taken until hospital admission. Abdomen was tapped several days before coming to hospital; no apparent relief was secured.

Has been constipated for several years, requiring frequent laxatives. No melena. Appetite generally good; no hematemesis. Menses always regular, menopause in 1919, no bleeding since. Some sticking pain in L.L.Q. of abdomen in Jan. 1935 upon walking or working more than usual. Only one pregnancy. "Womb" had protruded frequently with straining since March 1935. Burning on urination and nocturia for several months.

Exam.: Small, somewhat emaciated negress, temp. 98, pulse 110, resp. 24, BP 160/70. Mucous membranes pale. Teeth carious. Breasts atrophic. No abnormal chest findings. Mediastinum not widened. Heart apparently not enlarged. No murmurs. Pulse rapid. and feeble. Radials sclerosed and beaded. Abdomen: Bulges in flanks, fluid wave elicited. Large, tender, indurated, fixed mass about the size of a grapefruit in L.L.Q. Tender, hard, indefinite small masses palpated to left of midline below umbilicus. Rectum: "Constricting band felt within the anus but not narrowed down." Pelvis: Uterus prolapsed (procedentia). Firm tender mass the size of grapefruit in left half of pelvis, apparently fixed to lateral wall. Remainder of exam. Negative.

Lab.: Urine (7-1; 7-26) vd.; S.G. 1.016; alb. 0-2 plus; sugar acetone and casts neg.; leukocytes 5 per HPF; no RBC. Blood (7-1; 7-10) Hb 53 per cent D, 50 per cent D; RBC minus, minus; WBC 9,900 and 5,200; achromia 1 plus; polys 62, 63 per cent; lymphs 38, 32 per cent. Blood Kolmer and Kline neg. Peritoneal fluid (7-18) light green with reddish tinge; cells 381 per cu. mm., predominantly lymphocytes; S.G. 1.020; no coagulum; alb (Esbach) 4 per cent. Feces (7-11) completely neg.; no chemical blood (benzidine). X-rays (Chest, g-i series, colon): See chart.

Course: Temp. slightly elevated (100) on several occasions for first few months. On 9-22 temp. rose to 101.6. Temp. curve from then until death very irregular, varying from 102 to 96, usually reaching peak in afternoon or evening. Pulse also very irregular, varying from 90 to 140, generally rapid towards end. Resp. 20-28 throughout stay. On 7-10 passed 5 white, jelly-like stools, with considerable griping pain, no bleeding. Vomiting cleared up soon after admission to hospital. Fluid in abdomen accumulated rapidly, requiring paracentesis on 7-18, 4,390 cc. being removed. Tuberculin (0.1 mgm) negative. Laparotomy on

7-26. Postoperative course uneventful except for abdominal "distention," and discomfort. Out of bed 3 weeks later. Occasional vomiting. Abdomen tapped 8-13, 8-30, 9-10, 9-19, 9-26, 10-7. Became quite weak early in October, persistent diarrhoea developed. Died 10-12 at 8:55 A.M.

Dr. Prioleau (conducting): This case presents a great many findings, and it is difficult to correlate these. Mr. Settle, will you open the discussion?

Student Settle: We have the history of an elderly woman who has noted progressive swelling of the abdomen, constipation, and occasional abdominal pain. On examination she had a fixed mass in the left lower quadrant of the abdomen, and this is doubtless the cause of her trouble. The problem is, what is that mass? It may well be in the ovary, but this woman is older than most women with ovarian cysts.

Dr. Prioleau: What do you think about the rectal condition?

Student Settle: I don't know what the examiner meant when he wrote "Constricting band felt within the anus but not narrowed down."

Dr. Prioleau: Not infrequently we find the walls constricting and thickened, without apparent involvement of the mucosa; I imagine something like that was meant here, altho it was expressed poorly.

Student Settle: The nature of the fluid removed at paracentesis is very suggestive of tuberculosis: the cell count, the lymphocytic predominance and the albumin content indicate that the fluid was an exudate rather than a transudate. But this and the persistent fever are all that suggest tuberculosis.

The stools do not appear to me to be very typical of anything. But when correlated with the history of constipation and with the findings on rectal examination, the possibility of carcinoma of the rectum or sigmoid must be considered, even in the absence of rectal bleeding.

I would like to know what the findings at operation were.

Dr. Prioleau (reading from operative record): "The abdominal cavity contains about 4 quarts of straw-colored fluid. There is a large soft mass in the cul-de-sac. The omentum is covered with small grayish areas, very much congested. There are nodules over all the pelvic organs, and the organs there are matted together. There are a few liver nodules."

Now what do you make of it?

Student Settle: I think those nodules were probably carcinomatous nodules. Its origin is still not clear, as the pelvic organs were so matted together that the exact localization of the mass could not be made out. It seems to me that it was probably in the sigmoid or rectum, with subsequent metastasis to the peritoneum and the liver. The nature of the abdominal fluid can be explained on that basis, although the fluid accumulated more rapidly than I would have anticipated. The fever must be the result of some infection.

Dr. Prioleau: Mr. Watson, what can you add?

Student Watson: I agree in the main with Mr. Settle, and believe that the primary tumor was in the rectum, with metastasis to the liver. The fluid could be explained on the basis of portal obstruction from the tumor nodules in the liver.

Dr. Prioleau: But fluid passively accumulating in this manner would be a transudate, and would differ materially from this.

Student Watson: Yes, the nature of the fluid goes with carcinoma of the peritoneum, plus a low-grade infection.

Dr. Prioleau: We seldom see a carcinoma of the rectum as far advanced as this without causing intestional obstruction. Do you think she had obstruction?

Student Watson: I thought at first that the mass might have been a fecal impaction, the fecal mass later becoming channelized with free passage of feces.

Dr. Prioleau: The tumor is larger than the usual fecal impaction, and the process you have described would be very unusual.

Student Watson: I believe that the small nodules on the peritoneum were daughter tumors, implanted from the primary tumor by invasion of the peritoneum. My diagnosis is carcinoma of the rectum.

Dr. Prioleau: All right. But there are some findings which would be anticipated with carcinoma of the rectum at this stage which are conspicously absent, and there are some findings

present which cannot be explained on that basis. Mr. Rutledge?

Student Rutledge: I do not think that tuberculosis can be ruled out so easily, at least not with the knowledge of the case only up to the time of operation. The nature of the stools could be explained on the basis of a tuberculous enteritis. The fluid fits in nicely with the diagnosis of tuberculous peritonitis. The irregular fever is also consistent with that diagnosis. The mass noted at operation might have been encysted fluid. But of course the finding of liver nodules makes that unlikely, if we can understand that the nodules were within the liver and not just on its surface. The negative tuberculin reaction can be explained on the basis of an overwhelming infection. I am more inclined to believe that the condition was a carcinoma of the lower bowel, but I think that tuberculosis of the peritoneum would have been a very logical diagnosis before operation. The mass could have been either encapsulated fluid or a tuberculous fallopian tube.

I would like to disagree with Mr. Settle on one point: I do not believe that we can rule out ovarian tumors because of the age.

My diagnosis is either carcinoma of the rectum or tuberculous peritonitis, with the former more likely.

Dr. Robert Wilson: If the preoperative diagnosis had been tuberculosis, would there have been any reason for laparotomy?

Student Rutledge: For some unexplained reason laparotomy frequently helps cases of tuberculous peritonitis. May we see the x-rays?

Dr. Rudisill (demonstrating x-rays): We did two examinations of this patient. In July 1935 she was referred to us with a clinical diagnosis of either tuberculous peritonitis or carcinoma of the uterus. A chest film showed no evidence of pathology except for calcified plaques in the aorta.

Nine days later we received another request for examination with a clinical diagnosis of carcinoma of the gastro-intestinal tract. A complete examination of the esophagus, stomach and duodenum revealed no evidence of disease in these organs. The following day a barium enema revealed that the colon was somewhat spastic. We made a diagnosis of a moderate colitis, with no evidence of tumor of the gastro-intestinal tract.

Dr. Prioleau: Mr. Rutledge, does this affect your opinion?

Student Rutledge: Well, it doesn't help any.

Dr. Prioleau: Mr. Watson, do you think that the x-ray is a satisfactory method for studying the rectum and lower sigmoid?

Student Watson: Yes, I think it is good for every part of the tract except the lower part of the rectum.

Dr. Prioleau: Does any member of the faculty care to discuss the case?

Dr. Cannon: According to the record, the patient only had a slight fever on several occasions during the first few months. If this had been a tuberculous peritonitis of a severe enough grade to give the extreme matting that is necessary for masses to be felt, one would certainly have expected more fever. And in the post-operative course we note that the fluid was accumulating very rapidly. This rapid filling is certainly not common or characteristic in tuberculosis. These two points seem to me to be definitely against the diagnosis of tuberculosis.

Dr. Johnson: The white, jelly-like stools noted in this case were doubtless mostly mucus, as is seen in the condition of mucous colitis.

While the fluid recovered from the abdomen is suggestive of tuberculosis, it is also quite consistent with carcinomatosis of a serous surface. The reddish discoloration of this fluid would seem to be especially significant, and to point towards carcinoma. The greenish color may have been due to old blood as well.

Dr. Prioleau: I cannot discuss this case in an unbiased manner, as I know the outcome of the autopsy. I did not have the case under my care on the ward except for the last few weeks of her life, and I was not present at operation.

Preoperatively there were many things to suggest tuberculous peritonitis: fever, fluid, matted intestines, etc.. But postoperatively the various developments point more towards carcinoma. As Dr. Johnson has pointed out, the fluid is somewhat more suggestive of carcinoma of the peritoneum than of tuberculosis. The mass seems to have been quite localized and limited to the pelvis. And the operative find-

ings are quite typical of carcinoma. Tuberculosis of the peritoneum is usually quite easy to recognize at operation. And the rapid accumulation of fluid post-operatively also points towards carcinoma, as pointed out by Dr. Cannon.

Suppose we diagnose the case as one of carcinoma, then; where will we say the tumor was? It would certainly be most unusual to get a carcinoma of the rectum or sigmoid as far advanced as this one must have been without more evidence of obstruction. In carcinoma of the cecum evidences of obstruction are commonly lacking, but the location of the mass makes that diagnosis unlikely. In addition, I believe that there is very little tendency for carcinoma of the large bowel to give rise to peritoneal implantation. Occasionally a carcinoma of the stomach is implanted in this manner, as in the Krukenberg tumor of the stomach which gives rise to bilateral ovarian metastases in many cases from spread downward over the peritoneal surfaces.

But the carcinoma which characteristically spreads in this manner is the carcinoma of the ovary. The marked matting of the intestines which occurs in this condition frequently gives rise to intestinal obstruction. The anemia can be explained on the basis of chronic intestinal obstruction, and occurs occasionally as a conspicuous feature in obstruction of the large bowel. The fever can be explained on a basis of degeneration and necrosis within the tumor.

Dr. Lynch: This woman had a carcinoma of the ovary, and I believe that it is possible to explain the whole case on the basis of that diagnosis. The tumor arose from the left ovary, spread itself by peritoneal implantation, giving rise to the peritoneal fluid, and, by means of the peritoneal adherence, to partial and intermittent intestinal obstruction. With a tumor of this duration, primary in the intestinal tract, there should certainly have been some indication of the tumor on the x-ray and there should have been more evidence of intestinal obstruction, as pointed out by Dr. Prioleau. But the usual course of carcinoma of the bowel is quite different: there is extension via the lymphatic channels, with lodgement in regional lymph glands, or extension via the veins, with metastatic nodules formed in the liver. Seldom is there extensive peritoneal implantation in carcinoma of the large bowel. Occasionally such implantation is seen in carcinoma of the stomach, as in the Krukenberg tumor, which is a mucous carcinoma of the stomach, tending to extend by peritoneal implantation onto pelvic structures. But such extensive peritoneal implantation is the expected and usual course in carcinoma of the ovary, especially in the papillary form. Just such a picture as this may develop in a case of papillary cystadenoma of the ovary, which tends to be malignant clinically altho usually benign histologically. In a young woman it would be logical to make a diagnosis of papillary cystadenoma, but in an elderly woman, papillary carcinoma of the ovary would be the more usual tumor.

The low-grade fever may have been due to a low-grade enteritis which is usually present from time to time in such cases, or it may have been due to the absorption of substances from the necrotic tumor itself. Apparently it was not based on any demonstrable infection.

It is still somewhat hard to explain the anemia; I imagine that was due to the low-grade intestinal obstruction which was easily demonstrated at autopsy. This would lead to frequent vomiting, and that to a tendency not to eat. The anemia would then be a nutritional anemia. This seems to be a better explanation than bone marrow metastasis, because metastasis would have to be very extensive to produce so severe an anemia. As a matter of fact there were no evidences of metastasis in any organs; the liver nodules noted at operation were on the capsule, not within the liver. Dissemination was widespread thruout the abdomen, but the tumor tissue involved only the surface of the organs sheathed in peritoneum.

The histological appearance (demonstrating microscopic sections) is quite typical of the usual papillary carcinoma of the ovary, as you can see here. You note an active invasion of the peritoneal surface of the different organs by active, atypical epithelial cells. These tend to arrange themselves in slender papillomatous projections, the spaces between villi being occupied by a serous or possibly a mucinous fluid. The ovary proper was almost completely replaced by this soft, moist type of tumor-cyst.

This case was presented because it shows

the typical clinical course of the usual carcinoma fo the ovary, which serves to differentiate this tumor from most other malignant neoplasms within the abdomen.

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

TRANSITORY WORD BLINDNESS ASSOCIATED WITH RIGHT HOMONYMOUS HEMIANOPIA

Dr. H. G. A. Gjessing, Arch. Opthal., July, 1936, p-5

Dyslexia, or word blindness, is a peculiar phychic disturbance in which the patient is unable to read in spite of normal vision. It may be congenital or acquired. In the acquired variety he can understand the spoken language without difficulty.

The onset of Dyslexia may be very sudden. The etiology is diverse but the pathological changes are localized in the posterior portion of the outer and upper surface of the angular gyrus of the temporal lobe and the cartiguous portions of the occipital lobe. In right-handed persons it is located on the left gyrus angularis, ceteris paribus. Dr. Gjessing reports a case, in which the patient dictated a letter to his stenographer. On reading the letter he found that it contained numerous invectives. When read aloud by the stenographer it sounded as he had dictated it. And so it was with other words,—in the telephone directory for instance.

He was found to have a prostatic cancer of which he died, but with Pot. Iod., he improved so that he could read faultlessly. Dr. Gjessing goes into an interesting legal discussion:

"To me, the interesting feature is the peculiar way in which the dyslexia manifested itself. It seems fair to assume that the patient had a certain amount of ill feeling toward the person to whom the dictated letter was addressed. Under ordinary circumstances this ill feeling was suppressed and hidden beneath conventional polite phraseology. The patient's acute cerebral disturbance, however, interfered with his appreciation of certain word pictures, whereupon he promptly substituted the word images of the invectives he had always been tempted to use:

Such a condition might give rise to legal problems, for instance: The patient writes a letter himself, by hand. He does not know anything about his own ailment, this having arisen shortly before. In his letter he writes invectives instead of polite phrases. Is he then judicially responsible for his blunder? Or the patient writes a letter to B. In his letter he mentions A, whom he abuses. In good faith B used the expressions about A. Who, then is the responsible party—the patient or B? The examples might be multiplied indefinitely.

Finally I want to mention that the considerable improvement in the patient's fields of vision may have been due to the fact that he was partially left-handed. As the homonymous hemianopia was right-sided he could hardly have been absolutely left-handed."

I had a patient with a similiar trouble. His trouble was a visual word or object blindness. He could write the word Charleston, for instance, without looking at what he was writing. If one pointed to a cow, for instance, and asked its name, he would call it a book, or a pencil, or any other word. He would misname objects in his store, but he knew the use of the objects. If, for instance, he was asked, what is this used for; handing him a pencil, he would use it to write with. I did not try him on any writing except the automatic writing of words without looking at them. I showed him before the medical society. He closed up his store and moved to Florida. I never heard what became of him.

NEW TEXT BOOK

The Eye and Its Diseases, by Berens (Saunders) is one of the outstanding books on its subject. Those who are familiar with the Text Book of Ophthalmology, by Fuch, will realize

the wealth of real knowledge Dr. Beren's book contains when I say that it is like Fuch's Textbook of Ophthalmology, made up to date. It has incorporated in it the results of modern investigators and thoughts. I think that it would be impossible to summarize it but I may try to do so sometime.

Those who have read Fuch's Textbook of Ophthalmology will know what I mean when I compare Dr. Beren's book with it. Those who have not read Fuch's Textbook of Ophthalmology will find it of interest to do, or better, to get Dr. Beren's book.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"TWO-STAGE AMPUTATION FOR DIABETIC GANGRENE OF LEG"

Surgery in order to be sound should be practiced upon a basis of physiology and pathology in their broadest senses. The mere knowledge of operative technic is not sufficient; it is a dangerous weapon in the hands of those whose training is lacking in other respects. Too often is the technic of an operation learned, and this operation applied without due consideration of the disease process being treated. For example—the technic of subtotal thyroidectomy is the same whether the patient has good cardiac reserve or decompensation. In the latter case an operation of such magnitude no matter how well performed, would often result in death. Also should the severity of the hyperthyroidism not be taken into account, a postoperative thyroid crisis may bring about a fatal result. Numerous other examples could be pointed out.

Another type of case, somewhat different, is that of amputation in diabetic gangrene. In these cases the mortality and incident of wound infection is very high. Dr. Edward F. Crossan of Philadelphia is of the opinion that this is in great part due to violating the well established principles of surgery. He advocates a method of treatment which he considers fundamentally sound. (Am. J. Surg., XXXIII; 18 (July) '36).

In diabetic gangrene amputation is done in order to save life. To attempt to obtain primary healing or a well fashioned stump may defeat this purpose as it is not basically sound surgery from a pathological standpoint. The tissues at the site of amputation have a deficient circulation and are in a state of poor nutrition. The putrid odor upon making the incision is evidence to this effect. The lymphatics contain bacteria which of necessity interfere with wound healing. The orthodox amputation with flap formation interferes with the circulation of the stump and opens tissue spaces. Closure of the layers interferes with drainage. The foregoing factors to a great extent are responsible for the high mortality, and the high incidence of infected wounds in these cases. These may be obviated as far as possible by guillotine amputation, without the use of a tourniquet—with no attempt at flap formation or closure. In this way the circulation of the stump is interfered with to a minimum; tissues spaces are not opened; and the maximum drainage is provided. Accordingly the tissues of the stump are in the most favorable condition to combat infection and heal without further gangrene formation.

Once the infection has subsided, the circulation re-established, and the diabetes is under control, a secondary closure may be performed. With conditions for healing more favorable a stump may be better fashioned according to the indications of the particular case. This method of treatment is not necessarily indicated in all cases. It is particularly applicable in the more severe ones.

SOCIETY REPORTS

RESOLUTIONS ON THE DEATH OF DR. JAMES M. AUSTIN, COLUMBIA MEDICAL SOCIETY, JUNE 8, 1936

On the afternoon of Friday, April 24th, at five o'clock, the life of Dr. James Monroe Austin came to a quiet, peaceful close. Essential hypertension carried away this splendid fellow practitioner in the very prime of his life and in the flower of his usefulness. Although he had been aware of it for nearly five years, only his close friends knew that the shadow of this dread disease was upon him.

James Monroe Austin was born at Coronaco, Greenwood County, South Carolina, on February 3, 1898. His father, Dr. J. D. Austin, was an old school family doctor, beloved by hundreds of patients and neighbors in Greenwood, Laurens and Spartanburg counties. His mother, a woman of rare charm and understanding, was Sally Franklin Clardy. Both parents were connected by ties of blood and marriage with the pioneer families of piedmont South Carolina.

When James was quite young the family removed to Clinton, where Dr. Austin established his practice and became attending physician to the Presbyterian College. The Austin home of those days was a place of open hospitality and a favorite rendezvous for the college students and the young people of Clinton and of Thornwell Orphanage. In the charming atmosphere of such a home, located in a Southern college town of a generation ago, James Austin grew up. By his companions at the Clinton High school he became affectionately known as "Sheep" and this name followed him throughout life among his intimates. After graduation from the high school, James entered Presbyterian College, where he was graduated in 1919—after serving his country during the World War. While in college he took an active part in athletics and student affairs, and was at one time all-state catcher on his alma mater's baseball team. He was also a valued member of the Presbyterian College Glee Club.

Following his graduation he became connected with the firm of Dillard and Dillard in Clinton, where he worked several years, leaving them to accept the position of treasurer of the Medical College of the State of South Carolina. While serving in this capacity he married Miss Mary Clary of Gaffney, South Carolina. Deciding to take up his father's calling, he entered the Medical College in 1926 and received his degree in 1930, continuing all the while in his office as treasurer of the college.

Immediately after taking the State Board examinations, he became an interne at the South Carolina State Hospital, and after the completion of his interneship joined its medical staff, serving with faithfulness and devotion until three days before his death. During their nearly six years residence in the hospital community, the Austins constituted a popular part of that community. In addition to his widow, two sons, James M., Jr., and Barney Clary, survive. The latter was an infant of three weeks when his father received his summons from the Beyond.

James Austin was a quiet, meditative man, but one who thoroughly enjoyed life. He loved baseball, played a weekly game of golf and was a familiar figure at the local wrestling matches. Yet he was deeply interested in the higher things of life. A member of the Baptist Church, he practiced his religion, not in discussing theology, but in doing good. His sweet tenor voice added to the harmony of the Church Choirs in Clinton, Charleston and Columbia. About a year before his death Dr. Austin identified himself with the Boy Scout movement, becoming a committeeman of Troop 20, sponsored by the First Baptist Church. He was a member of the Columbia Medical Society* and the American Psychiatric Association. His fraternal orders were the Knights of Pythias and the Sigma Kappa Chapter of Phi Chi Medical Fraternity, of which he was a charter member. But more than organization, James Monroe Austin valued friendship, and his friends were legion—not the sudden, self-seeking intimacies of the congenital "mixer," but the deep-flowing loyalties that spring from spiritual kinship and years of association. And his devotion to charity was proverbial among

his colleagues at the State Hospital. There, in his chosen work as a psychiatrist, his life came to its full, though brief fruition. There he ministered tenderly to the mentally afflicted and no one grieved more sincerely at his passing than did these pathetic wards of society, among whom he labored so unselfishly.

THEREFORE, be it resolved:

FIRST: That the Columbia Medical Society, the State Hospital and the citizenry of Columbia and of South Carolina have lost a valued friend, a loyal colleague and a skillful and devoted worker and that our deep sympathy be extended the bereaved family;

SECOND: That a copy of these resolutions be spread upon the pages of the minute-book of the Columbia Medical Society;

THIRD: That a copy be sent to the family of Dr. Austin;

FOURTH: That copies be sent to the South Carolina Medical Journal and to the local daily papers.

CHAPMAN J. MILLING, M.D.
THOMAS A. PITTS, M.D.
SOL B. McLENDON, M.D.

*Dr. Austin was also a member of the South Carolina Medical Association.

Adopted by the Columbia Medical Society with a rising vote.

BENJ. RUBINOWITZ,
Secretary.

RIDGE MEDICAL SOCIETY

The Ridge Medical Society met at 7:30 o'clock Monday the twentieth of April in the usual meeting place with a good attendance though not so large as usual.

We had two visitors Dr. L. C. Shecut of Orangeburg and Dr. W. A. Whitlock of Aiken.

Dr. Ballinger presented some rare specimens of intestinal parasites with report of a case which elicited much interest.

He also reported a case of pregnancy and parturition with most unusual symptoms which recovered. Both cases were freely discussed.

Dr. W. P. Timmerman introduced Dr. L. C. Shecut of Orangeburg, our essayist who after expressing his pleasure at being with us read a most interesting and instructive paper on Typhus Fever.

Dr. Asbill in discussing Dr. Shecut's paper emphasized the methods of the spread of the malady with special emphasis on the large distributing rat and his viciousness and gave methods for it's extermination.

Dr. W. P. Timmerman discussed some of the features of typhus fever and reported two cases one of which terminated fatally. He discussed some of the unusual conditions and symptoms which he hadn't seen or heard of before.

Dr. Frontis called attention to the affections of the mouth, etc., which caused such variations in the oral and rectal temperatures.

The following were elected as officers for the ensuing year.

Dr. O. D. Garvin, President, Ridge Spring.

Dr. E. P. Taylor, Vice President, Batesburg.

Dr. P. A. Brunson, 1st Vice President, Ridge Spring.

Dr. J. N. Crafton, 2nd Vice President, Modoc, R. F. D.

Dr. W. P. Timmerman, Sec.-Treas., Batesburg.

The President was authorized to appoint all committees not otherwise ordered. Drs. W. W. King of Batesburg and F. G. Asbill of Ridge Spring were appointed an enlisting committee, and we confidently expect them to create greater interest in attendance.

Supper was served in The Rutland Hotel.

Drs. Crafton, Frontis and Timmerman attended the meeting of the State Medical Association.

The Ladies Auxiliary had an interesting meeting at Mrs. C. E. Ridgell's where Mrs. F. G. Asbill was assistant hostess.

Mrs. J. D. Waters and Mrs. W. P. Timmerman attended the state meeting of the Ladies Auxiliary of the S. C. Medical Association in Greenville and reported a most pleasant occasion.

W. P. Timmerman, M.D.,
Secretary.

MEDICAL SOCIETY OF SOUTH CAROLINA

Minutes of the Regular Meeting of the Medical Society of South Carolina, held Tuesday evening, April 28th, 1936, at 8:30 o'clock, at the Roper Hospital

The meeting was called to order by the President, Dr. W. A. Smith.

Roll Call. Present were: Drs. A. E. Baker, B. R. Baker, Beckman, Bowers, Buist, Buist, Jr., Burn, Cain, Cannon, Cathcart, Chamberlain, Deas, de Saussure, Evatt, Heidt, Hiott, Hope, Hoshall, Johnson, LaRoche, Lynch, McCrady, O'Driscoll, Pearlstine, Peery, Prioleau, J. J. Ravenel, W. J. Ravenel, R. B. Rhett, W. P. Rhett, Rudisill, Rutledge, Sams, Sanders, Scharlock, W. A. Smith, W. H. S. Speissegger, Steinberg, Taft, Waring, I. R. Wilson, Robert Wilson and Robert Wilson, Jr.

Guests were: Dr. Douglas Jennings, Bennettsville; Dr. Westcott Black, Beaufort; Dr. A. M. Lassek, Medical College.

The Minutes of the previous meeting were read and approved.

There was no business transacted at this meeting.

Dr. Robert Wilson suggested a report from the Delegation to the State Association meeting. The President instructed the Secretary to ask for a report from the Chairman at the next meeting.

The Scientific Program consisted of the following:

1. A Case Report by Dr. W. H. Prioleau on Intrapleural Pneumolysis.

This was discussed by Drs. J. J. Ravenel and W. A. Smith, and completed by Dr. Prioleau.

2. Dr. Douglas Jennings, Bennettsville, on "Some Interesting Experiences in Abdominal Surgery."

This paper was discussed by Drs. Cannon, Lynch and Cain, and the discussion was closed by Dr. Jennings.

The President then thanked Dr. Jennings for his paper and visit.

3. Dr. John C. Beckman, on "Erythromelalgia, Disease or Symptom Complex."

Discussion by Drs. Pearlstine, Prioleau, Hoshall and Robert Wilson followed.

Dr. Beckman closed the discussion.

The meeting then adjourned.

J. I. Waring, M.D., Secretary.



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Table talks and intimate discussions relating to everyday problems encountered by fitters in their store work are carried on following the classwork. Experienced Camp nurses and instructors are in charge, and they attempt to give each student-fitter personal attention. Fitters are instructed not to diagnose or treat disease, and do not fit garments except in coöperation with physicians.

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BOOK REVIEWS

THE 1935 YEAR BOOK OF GENERAL MEDICINE. Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., S.D., F.R.C.P., (Hon.) Edin, William B. Castle, M.D., A.M., William D. Stroud, M.D., George B. Eusterman, M.D. The Year Book Publishers, Incorporated, 304 South Dearborn Street, Chicago.

The main sections of this volume are edited by authors of national reputation, for instance infectious diseases by Dr. George F. Dick, diseases of the chest by Dr. Lawrason Brown, diseases of the blood by Drs. Minot and Castle, diseases of the heart by W. D. Stroud, the digestive system by George B. Eusterman. There are numerous illustrations throughout the book and like the volume on surgery has nearly a thousand pages covering the journals of the world.

DISEASES OF THE RESPIRATORY TRACT. Clinical Lectures of the Eighth Annual Graduate Fortnight of the New York Academy of Medicine: By 21 contributors. 418 pages with 56 illustrations. Philadelphia & London: 1936. Cloth, $5.50 net.

This volume is a compilation of the lectures delivered before the New York Academy of Medicine in its 1935 post graduate course now becoming a well known educational factor for a large number of physicians in many parts of the country. It is a book of over four hundred pages. The subjects taken up range from the simplest to the most complex. For instance the common cold is discussed by Dochez. The author gives the result of an extensive investigation. Progress has been made by the author and his co-workers but the problem is not yet solved. Then there is the subject of sinus disease from infancy to old age discussed by C. T. Porter. Pneumonia in its various forms come in for considerable attention. The Pneumonia in child-hood is presented by Charles Hendee Smith of Bellevue where a study has been made for ten years. The serum treatment in these cases has proved of value in types one and fourteen in infants. This is a hopeful procedure and is expected to play a larger part in future treatment. The author is certain that all treatments should be attended to around the feeding hour so that the patient may be disturbed as little as possible. Oxygen and transfusions have their place in the treatment. There are about twenty contributors in this volume, several being from great Universities outside of New York City. The general practitioner will find the book of practical value in his daily work.



THE 1935 YEAR BOOK OF GENERAL SURGERY. Edited by Evarts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine: Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis. The Year Book Publishers, incorporated, 304 South Dearborn Street, Chicago.

These year books provide for a resume of the world's literature. It is impossible for any doctor to comprehend all of the advances in surgery alone even in one year without some such epitomy as this book provides. This particular volume has eight hundred and thirty eight pages.

SURGICAL CLINICS OF NORTH AMERICA. Issued serially, one number every other month. Volume 16, Number 1. Chicago Number—February 1936. 356 pages with 78 illustrations. Per Clinic year February 1936 to December 1936. Paper $12.00; Cloth $16.00 net. Philadelphia and London: W. B. Saunders Company, 1936.

These clinics have now taken on the more practical aspect of bedside treatment. There is also a more definite plan of presenting certain phases of disease and remedial measures by concentrating on the symposium type of procedure. For instance, in this issue there is a symposium on cancer of the cervix giving a complete survey of the diagnosis and modern methods of treatment. There are of course many other interesting subjects treated in this volume. One of particular interest is by Bevan of Chicago on appendicitis. Excellent efforts have been made to standardize the management of a case of appendicitis but the mortality is yet much higher than it should be.

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PELLAGRA AND THE NEW DEAL*

By
C. J. MILLING, M.D.
Columbia, S. C.

The work of Goldberger and his associates between the years 1914 and 1920 so firmly established the theory that pellagra was a disease due to dietary deficiency, that few serious efforts have since been made to disprove that proposition.

Probably the ablest contemporary opponents of this theory are Partlow and Tucker. Dr. W. D. Partlow, superintendent of the Alabama Insane Hospitals, believes pellagra to be an infection because of its regional distribution. He found it rare in Northern institutions in which the diet was practically identical to that of Southern institutions. He also observed that when first noted in this country it was more virulent than at the present time.(1)

Dr. B. R. Tucker, whose distinguished opinion cannot be lightly dismissed, believes that although vitamin deficiency is probably a contributing factor, the actual cause of the disease is a filterable virus which is probably allied to those of acute anterior poliomyelitis, influenza and herpes-zoster. He argues both from the regional incidence of the disease itself and from the distribution of the lesions in relation to peripheral innervation.(2)

In the papers cited, Tucker stresses the fact that pellagra reached its peak during the "fat" years previous to the depression and declined during the "lean" years which followed. With considerable justification he interprets this as indicating that the disease is not primarily a matter of dietary deficiency. The above phenomenon, although here differently interpreted, was what led to the writing of this paper, as will presently be shown. But whether we insist that vitamin deficiency is the primary cause of the disease or merely a contributing factor, there can be no serious doubt as to its immense importance.

We are all, of course, familiar with the clinical manifestations of the disease and likewise with the equally well known environmental factors usually associated with its development. We expect to encounter it among the submerged, or at best, the marginal sections of the population. It is chiefly a disease of the textile operative and the tenant farmer or share-cropper.

There are, it is true, many individuals not covered by the above classification who, nevertheless, develop this disease. Among these may be mentioned the fastidious person who refuses to eat certain foods, thereby bringing about a nutritional unbalance. There is the chronic alcoholic who does not assimilate his food properly, even though he may eat more than enough. There is the psychotic individual who is either indifferent to all food or who uses no judgment in his choice. There is the food-faddist who has allowed some self-styled "professor" to persuade him that man's salvation is by bran alone.

Nevertheless, statistically speaking, all the above are of rare occurrence with the exception of the psychotic patient who develops pellagra as a secondary condition. This group is fairly common in all mental hospitals, the psychiatrist being all too familiar with the manic-depressives, schizophrenics, involutionals and others

*Read before the Columbia Medical Society, June 8, 1936.

who have developed the disease upon the background of a primary mental disturbance.

But despite the occurrence of many such cases, it was the pellagrin per se who, in 1928, constituted 28.5 per cent of all admissions to the South Carolina State Hospital. It is this group to which the diagnosis, "Psychosis with Pellagra" is applied. This primary pellagrin is, as we have seen, drawn from an unfavorable environment, with negligible exceptions. He is the victim of undernourishment, particularly in regard to protein and vitamin deficiency.

In 1928 pellagra furnished one of the gravest problems confronting anyone attempting to treat mental disease. In that year the South Carolina State Hospital admitted 287 persons suffering from the disease and recorded 124 deaths due to its ravages. Of the latter 40 were white and 84 negroes, although admissions were almost equally distributed between the two races.

The next year witnessed little improvement, with eight more admissions and only three fewer deaths. Of the latter 50 were whites and 91 negroes. Nor were we at all encouraged when, in the autumn of 1929, the depression descended upon us. What prospects for statewide or sectional improvement might one expect in a disease whose very roots were supposed to spring from poverty.

Statistics for the following year (1930) are misleading, since they represent only nine months, a legislative act rendering necessary a change in the fiscal calendar. But it will be seen that the incidence of the disease was about the same, although the mortality was greatly decreased. During the nine months represented, 215 pellagrins were admitted and 71 died. Since the deaths were still recorded month by month it is possible, for purposes of comparison, to give the deaths for the calendar year of 1930, a total of only 87.

The figures for the next twelve month period, from September 30, 1930, to September 30, 1931, show 241 admissions and 80 deaths, of whom 13 are white and 67 colored.

By the following fiscal year, ending September 30, 1932, a sharp decline is noted in admissions as well as deaths. Of 129 admissions only 25 patients succumbed to the disease. Again, although racial distribution was about equal, as represented by the admissions, the deaths were in the ratio of four colored to one white.

With the next year the fiscal calendar was again changed by legislative act and the figures given represent only nine months, or from September 30, 1932, to June 30, 1933. During this time a total of 90 pellagrins received admission and 26 pellagrins died.

Fortunately for the rest of the period under consideration the statistics have been compiled for twelve month periods, each ending June 30. The next such period, from June 30, 1933, to June 30, 1934, shows 59 admissions with 23 deaths, white admissions and colored deaths again led.

For the year ending June 30, 1935, the figures are 54 admissions and 20 deaths. This is the last year for which complete figures are available.

Yr.	*Ad.*	*Died*	*Remarks*
1925	67	37	
1926	110	68	
1927	184	91	
1928	287	124	
1929	295	121	
1930	215	71	(January thru September)
1931	241	80	(Sept. 1930, thru Sept. 1931)
1932	129	25	(Sept. 1931, thru Sept. 1932)
1933	90	26	(Oct. 1932, thru June 1935)
1934	59	23	(July 1933, thru June 1934)
1935	54	20	(July 1934, thru June 1935)

The above figures are, I believe, rather significant, in that, while taken from a group, they constitute a fairly accurate cross-section of the general population of the State of South Carolina. For purposes of comparison, let me quote a few figures obtained from the State Board of Health, through the courtesy of Drs. James A. Hayne and Martin B. Woodward. The year by year incidence of the disease within this larger group, exhibits, as will become apparent, considerable similarity to that within the smaller group. In both instances it will be noted that 1928 and 1929 are peak years for deaths, though for morbidity 1930 is ahead of 1928 in the State Board's figures.

PELLAGRA STATISTICS FOR SOUTH CAROLINA
1925-1935 State Board

Year	*Reported*	*Died*	*Remarks*
1925		408	
1926	3053	529	
1927	4626	732	
1928	6409	937	
1929	7849	909	
1930	7311	613	(Nine months period)
1931	4827	637	
1932	3389	415	
1933	2489	353	
1934	1724	292	
1935	1991	310	

In relation to the above figures Dr. Woodward writes: "Unfortunately there was some change in the fiscal year in 1930 and again in 1933, so that there appears to be a certain overlapping in the periods covered. Nevertheless, I think it clearly evident that there has been a striking decrease in the number of cases during this eleven-year period."

After reviewing the figures above quoted it seemed desirable to obtain the statistics for the previous decade for purposes of comparison. The State Board again cooperated by furnishing its mortality figures, which are given in the following table. No morbidity figures were kept at that time. It will be noted, however, that most of these are for ten month periods, only two being twelve month periods and one eleven month. Nevertheless, it is very apparent that in 1915 there was an enormous number of deaths due to pellagra, the rate declining about 60 per cent the next year. Except for a few minor rises, it gradually goes down from 1916 to 1925, when there is another sharp rise, but nothing to compare with the figure for 1915, the first year statistics were kept by the State Board.

Again these figures bear a close resemblance to those of the State Hospital, whose complete statistics are presented below. Following the independent discovery of the disease at the South Carolina State Hospital in 1908, a statewide conference was held, followed by a national conference in 1909. Monthly figures are available from 1908 for the State Hospital, showing that by 1910 the disease had reached epidemic proportions. 1914 and 1915 were the peak years with the remarkable drop, already noted, in 1916. With regard to this drop Dr. Woodward writes:

"Between 1912 and 1915 an extensive Educational Campaign was used with the result of better diagnosis being made. This, together with the fact that by 1915 the so-called epidemic was probably on the wane, explains why there was such a drop of the deaths from 1915 to 1916."

ADMISSIONS AND DEATHS DURING FISCAL YEAR
STATE HOSPITAL

Year.	*White Adm.*	*White Died.*	*Col. Adm.*	*Col. Died.*	*Total Adm.*	*Total Died.*
1908		4		29		33
1909		16		52		68
1910		26		80		106
1911		50		110		160
1912		95		133		228
1913		66		99		165
1914		136		220		356
1915		96		231		327
1916	108	59	100	82	208	141
1917	101	45	73	67	174	112
1918	87	59	56	66	143	125
1919	34	19	28	24	62	43
1920	21	15	62	14	83	29
1921	39	15	54	39	93	54
1922	45	17	54	38	99	55
1923	39	23	61	45	100	68
1924	34	16	48	54	82	70
1925	48	21	19	16	67	39
1926	67	29	43	39	110	68
1927	107	34	77	57	184	91
1928	145	40	142	84	287	124
1929	149	30	146	91	295	121
1930	97	17	118	54	215	71
1931	121	13	120	67	241	80
1932	63	5	66	20	129	25
1933	55	10	35	16	90	26
1934	37	7	22	16	59	23
1935	33	9	21	11	54	20

Remarks

1908 No figures available for admissions
1928 28.5 per cent of total causes of death
1929 28.47 per cent of total causes of death
1930 First nine months
1933 First six months

PELLAGRA STATISTICS FOR STATE OF SOUTH CAROLINA BOARD OF HEALTH

Year.	*Reported.*	*Died.*	
1915		1379	January-November
1916		553	January-October
1917		544	January-October
1918		558	January-October
1919		359	January-December
1920		219	January-October
1921		260	January-October
1922		319	January-October
1923		267	January-October
1924		275	January-October
1925		408	January-December
1926	3053	529	January-December
1927	4626	732	January-December
1928	6409	937	January-December
1929	7844	909	January-December
1930	7311	613	Jan.-Sept. 9 mos. period
1931	4827	637	January-December
1932	3389	415	Oct. 1, 1931-Sept. 30, 1932
1933	2489	353	July 1, 1932-June 30, 1933
1934	1724	292	July 1, 1933-June 30, 1934
1935	1991	310	July 1, 1934-June 30, 1935

Now the feature of interest in these figures lies chiefly, as I see it, in the fact that this disease, in which we would have expected a marked increase, has shown a steady decline during the very worst depression years.

This phenomenon is by no means confined to our own State. Reece called our attention a year ago to the fact that 1928 was the peak year for pellagra in Alabama, Kentucky, Mississippi and South Carolina, whereas Virginia, Louisiana, Georgia and Florida reached their worst year in 1929. He attributes this fact in part to the floods of 1927 which affected Arkansas, Tennessee, Mississippi and Louisiana.(3) This, however, would not account for the increase in South Carolina. The same observer noted the universal decline beginning in 1930.

For the entire registration area the death rate per 100,000 was 5.0 in 1927, 6.1 in 1928, 5.8 in 1929, 5.3 in 1930, 4.3 in 1931 and 3.1 in 1924.(4)

In attempting to account for this decline during the depression years many factors have to be considered, among which may be mentioned general educational enlightenment, public health propaganda and the widespread adoption of brewers' yeast both as a preventive and a therapeutic measure.

Another element of undoubted importance is the greater dependence of man upon the soil in times of industrial insecurity. Many families who formerly depended upon textile work alone found time in the slack years to grow a garden or care for a cow. Though their clothes might suffer, their stomachs benefited.

But to this observer, at least, it does not seem apparent that the factors discussed above are sufficient to account for the sharp drop in 1932. It is worthy of note that this is the year during which that social and political upheaval known as the New Deal came into being.* A precipitous decline in the pellagra figures was immediate. Is it not, therefore, reasonable to conclude that, in the free distribution of foodstuff, the creation of new jobs under the various government relief agencies, the CCC camps and the direct relief afforded by the administration, that we have the answer? I think that the figures show too close a relation to the New Deal for us to disregard them. It is true that 1928 and 1929, the worst pellagra years, were the period when two cars were supposed to repose in every garage and a chicken in every pot, but they were also the years when money crops were raised to the exclusion of food crops and when earnings went not into intelligently selected food but into vacuum cleaners and radio sets.

That the decline, already begun in 1930, was tremendously accelerated by the New Deal, seems indicated by the comparative death rates from 1927 through 1932 in the neighboring commonwealths of North Carolina and Mississippi, both typical pellagra states.

Year.	*North Carolina.*	*Mississippi.*
1927	22.8	35.4
1928	28.0	38.0
1929	30.4	36.6
1930	31.2	28.5
1931	21.5	26.6
1932	15.0	15.0

*While it is true that the various relief agencies did not go into effect until 1933, the New Deal really began with the 1932 elections.

This paper is not intended in any sense as a commentary upon the New Deal. I have no quarrel whatever with those who may think certain of its activities unconstitutional or unwise. My purpose is merely to call attention to a scientific fact and to place upon it my honest interpretation. That interpretation is that pellagra, already on the wane after 1929, received a staggering blow as a result of the government's effort to provide the forgotten man with the necessities of life.

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SCREW WORM INFESTATION

By
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Chester, S. C.

Screw worm infestation in South Carolina is principally a problem for the veterinarian and the economist. But here, as in other new territory which it has invaded, there are enough cases of human infestation to demand the attention of the medical profession.

This pest has been known in the Central American countries for many years and from there it spread up into the great southwest of our country. In the last few years it has traveled along the gulf states and up the Atlantic Coastal region. In 1934 the fartherest north a case of animal infestation reported in this section was near Ridgeway, S. C. In 1935 cases were being reported around Fayetteville, N. C. The spread will continue northward until climatic conditions become unfavorable for its cycle of development.

There is a notion that the big influx of cattle into South Carolina in 1934 from the scorched plains of the west is the cause of its rapid appearance over the state. But this is not the case. A veterinarian, who inspected thousands of these cattle, injured during the hot weather by shipping accident, said he did not see a single case of screw worm infestation. So this is one misfortune that can't be laid at the door of the "New Deal."

The eggs of screw worm are laid by a certain fly (Cochliomyia americana) which belongs to the blow fly family. It is bluish green with three stripes along the back between the wings and with a yellowish red face. This fly deposits great numbers of yellowish eggs in irregular masses on the edge of cuts, abrasions, blood spots or wounds of any kind. With favorable temperature these eggs will hatch in the remarkably short time of twelve to fourteen hours. The young worms promptly begin to penetrate the tissues causing pain and a serosanguineous discharge of a most disagreeable cadaverous odor. In young animals these eggs are sometimes deposited around the navel or sometimes around the teeth as well as in all sorts of artificial wounds. In the human they are sometimes deposited in the nose where there is a nasal discharge or some small ulcer. These worms grow rapidly and reach about the length of 1-2 to 3-4 of an inch. After four or five days the adult worms drop out of the wound and bury in the ground and after a few days there emerge as the fly which soon mates and more eggs are deposited.

There is very little liklihood of an infestation in a normal vigorous person but in childhood or old age or the debilitated where deep sleep or stupor dulls the sensibilities. The person with cancer, old ulcers or osteomyelitis on the exposed areas of the body, who are unprotected during sleep furnish an inviting field. The child with impetigo is also susceptible under the same condition.

As the young worms begin their penetration and destruction of live tissue there is produced

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a burning, pinching pain and characteristic wine colored sero-sanguineous discharge and characteristic odor, referred to as cadaverous.

The animal or person quickly takes on a septic or "sick" appearance and usually results in death if not given proper attention. In the human there is a considerable rise in temperature and increase of leucocytes and chilly sensations as would be expected in such toxic wounds.

One thing peculiar about this worm is that it does not bury itself completely in the tissue and therefore it is very seldom that enlargement or cutting is necessary in treatment. They crater out the wound by destruction of tissue always eating in with the sharp or pointed end, which has two strong rather powerful hooks or jaws which aid in tearing the tissue. The blunt or rear end remain in contact with air, as the breathing apparatus is situated there and appears as two brownish plates. The worms lie usually side by side, arranged somewhat analogous to cavities in honey comb. There seems to be a slight rotary motion as the worms busy them-selves with their destructive feeding. Their motility is due to the circular spine around the body which are similiar to the thread on screws and from which it gets its characteristic name.

The symptoms are so characteristic that when this condition is placed on your ever-increasing list of probable diagnoses, a correct diagnosis is very easy. In easily accessible wounds the worms are readily seen. In the nasal cavity when they develop rather high up the view may be obscured by partially dried secretion. After a cleansing solution the nasal speculum brings them well in view.

The prophylaxis depends on the proper protection of all wounds from the possibility of contact from flies and proper screening of young, old and debilitated especially during sleep. Also measures should be taken to control the development of flies by destruction of worms removed from wounds and the burning of all animals who die as the result of infestation.

The treatment is also rather simple. It consist of mopping away the secretions with gauze or cotton, cleansing with peroxide of hydrogen and irrigating with Boric acid solution or 1 to 2000 potassium permanganate solution. This is done to reduce the disagreeable odor and to remove the secretions which attracts the flies and encourage another deposit of eggs. Most of all these measures are carried out so that the real destructive agent can be applied. Two very effective agents are had in chloroform and benzol, the latter being in more universal use. The wound is lightly packed with gauze saturated with benzol so that the fumes are inhaled by the insects. The inhaled fumes are equally as effective as actual contact of the drug with the insects.

Briefly the patient that prompted this presentation was a farmer 72 years old who lived in an unscreened house and who during the summer took naps at the noon hour either on the porch of his house or on the ground in the shade of the trees. He said he had had "catarrh" for quite a while, otherwise no disability. Was somewhat debilitated on account of age and a rather limited food supply. Five days before seen felt chilly and a little weak. He noticed that his accustomed exercise tired him, thought he had some fever. Noticed a little bloody discharge and which he thought was nose bleed and it was for the last condition that he sought relief. The first impression was a malignancy of the nasal structures. After some Ephedrin solution was dropped into the nose to constrict the tissues and stop the oozing, the worms were brought into view. The nose seemed packed with worms lying side by side. A few worms were dislodged. The following day benzol was instilled into the nose and very readily 20 worms were blown out. For several days following, the nares were lightly packed with gauze saturated with benzol and over 200 worms were gotten out of right side of nose. There was no infestation on left side. During this time efforts were made to have him hospitalized which was finally done after several days delay but no worms found after admission to hospital. There was a great deal of destruction of mucuous membrane over septum, turbinates, etc. With irrigations of saturated boric acid solution and instillation of 100 per cent neo silvol solution the wound granulated as rapidly as could be expected. He was discharged after three weeks stay in hospital in a fairly satisfactory condition.

DISCUSSION

Dr. E. A. Hines, Secretary, Seneca:

Dr. Wallace was kind enough to give me a copy of his paper a few moments ago to look over. It is obvious to you that I do not know anything about the real subject presented. The Program Committee, however, looked upon this paper as being one of the most important that we have at this session, and I believe that you will think so, too. Dr. Wallace does not appear upon our program often, but he is a real investigator, and every time he appears he makes a real contribution. He was one of the first to make a study of pellagra in South Carolina, one of the first states in the Union where extensive research on this disease was made. Dr. Wallace presented an epoch-making contribution a few years ago on tularemia, being one of the first in this country to do so. Now he appears with another paper of which I know you will be proud. Dr. Wallace is also a true physician, for he has his mind always on preventive measures.

He has been thinking of the vast number of people who may be affected by this infestation—first, the children; second, the aged; third, the feeble.

Dr. W. P. Timmerman, Batesburg:

I should like to mention the fact that Dr. Wise, of Saluda, several months ago presented a case similar to that of Dr. Wallace. Dr. Wise, through his timidity, did not write it but presented it orally to the local medical society.

I wish to congratulate Dr. Wallace.

Dr. James A. Hayne, State Health Officer, Columbia:

I simply wish to call to the attention of the medical men in that State that we have something in the State that we have had no record of having before up to last year—that is, fatal infestation of a human being by screw-worm larvae. In looking over my records I found eight cases of fatal screw-worm infestation. Now, remember that last year was the first year that screw worm made its appearance among animals to any great extent. We have, as you know, the black blow-fly, we have the green blow-fly, and we have this screw-worm blow-fly. Very characteristic of this fly is that it has a red head. The other flies that you know do not have red heads, neither the common-house-fly nor the green blow-fly nor the black blow-fly. This fly has three white stripes on its back. It will lay its eggs whenever it can find fresh blood, and it will come from a long distance to find fresh blood. It has been likened to the buzzard, which may not have been seen at all until carrion appears, when it is seen coming down out of the empyrean blue. The danger to human beings is the rapidity with which this fly lays its eggs. This screw fly lays its eggs rapidly, one after another. The egg hatches within four hours, under favorable circumstances, after being laid, and develops a maggot or screw worm, which very rapidly increases in size and in less than five days becomes a pupa and drops out of the wound. The fly can lay from 255 to 300 eggs.

The worms may not be seen in the cavity unless you look for them. In the case reported by Dr. Wallace he did not suspect screw worm, and had no idea it was there. He looked within the nostril of the patient with a flashlight, saw the movement there, and thought it was the pulsation of the artery. I mention that because we might not think to look for screw-worm infestation. Of course, the treatment is easy; 90-per-cent commercial benzol is applied to the wound, then apply a pledget of cotton or gauze.

The prevention of screw-worm infestation is simple, of course. Paint fresh wounds with pine oil. The odor of the pine oil repels the fly.

The cases of this infestation are easy to find if we look for it, but we shall not find it unless we look for it.

I live on a farm and have eleven hogs, three calves, and one goat on the place infested with screw worn The calves were infested at the umbilicus; the hogs were infested when castrated. Now, in the West they do not have hogs castrated and do not allow cows to have calves from May until heavy frost, because they know the animals will be infested in that way. It is a fatal disease for animals because of the weakness from infestation and the toxemia produced from entrance of the worms in great numbers.

Dr. Wallace, closing the discussion:

I have nothing further to say except that I appreciate the discussion by these gentlemen. I simply wish to say that if the little effort I put forward in the preparation of this paper aids in the prevention of one single case of this infestation or in the cure of one case of this horrible condition I shall feel amply repaid.

TYPHUS FEVER

By

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Orangeburg, S. C.

Typhus fever is a member of a family of maladies which are grouped together under the name of Rickettsia diseases. The name was given in honor of Ricketts, an American, who died of typhus while studying the disease in Mexico City. The particular variety which is responsible for typhus is called "Rickettsiae Prowaceki" adding the name of Prowacek, an Austrian who died in the same manner. These minute bacillus like things acquired their first parasitism on insects. Similar organisms in-

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capable of producing disease in man have been found in a variety of insects. Parasites of this order have been found in sheep lice, in dust lice, bedbugs, mosquitoes, mites and ticks. The Rickettsiae needed a name for themselves because they could not be logically grouped with either the bacteria or with the protozoa. Now it seems that the two hosts involved in giving typhus to man are the louse and the rat flea on which are parasitic the Rickettsia. The infected louse dies within two weeks; but the infected rat flea gets rid of the parasite in a month or two and recovers. If one or more of these infected fleas or lice feed on man, they transmit typhus fever. The louse is the more dangerous and causes Epidemic Typhus because it stays with it's host so persistently until it (the louse) dies. While a flea does hop away at times, Epidemic Typhus fever, as seen along the Southeastern Coast is known as Brills disease. Brill first described it in 1898 among the Jews of New York. He thought it was a new disease but it was later proven to be true typhus brought to this country by immigrants from Southeastern Europe who had previously had the disease, some even in childhood and in whom the virus had lain dormant for years and then had another attack or recrudescence, which would under conditions of louse or flea infestation spread the disease.

The fifteenth century is as far back as typhus fever can be authentically traced, altho it may have existed for thousands of years and may have been among the many epidemics of the remote past which killed millions and were known as plagues. And just to think that most of the work in discovering the facts about typhus has been done since 1928, and some of the most recent investigations are not yet in print.

Now the prevalence of this disease in our own section of the country may be noted by the comparison of the number of cases reported in other sections. There were 528 cases in New York City and Boston from 1900 to 1930. In South Carolina 1927-1935—9 years—259 cases. In 1933 there were reported in Georgia 637 cases.

During the world war I witnessed the delousing processes on soldiers and clothing but was surprised to recently read a report of the typhus situation on the far Eastern front. It said typhus began in the Serbian Army. There were less than 400 doctors in the Country, almost all of whom contracted the disease and 126 died. The new cases per day ran into many thousands—2500 were admitted daily to the military hospitals alone. In less than 6 months over 150,000 people died of typhus. This was in 1914. The Serbs had 60,000 Austrian prisoners and one half died from typhus. In Russia the prevalence and ravages of typhus during the war reads like medieval history. During the war and until 1921 there were no less than 30 million cases of typhus with three million deaths in Soviet Russian territory. The remarkable thing is the total absence of typhus from the Western front. Extraordinary sanitary measures, bathing and delousing in the Allied as well as the German armies must be given the credit. The Germans would not transfer their troops from the Eastern front to the Western front for fear of bringing typhus which they knew would cause them to lose the war.

My interest in this disease was aroused by the fact that I had under my care this year 4 cases at one time, the 4th case going down with his invasion about one month after the first case started. Two cases were in the same household, husband and wife. The wife going to bed about two and a half weeks after the husband's invasion. The third case was in the City limits but widely separated and no contact. The 4th case was in the Southern section of the town and no known contact with the other cases. These cases were diagnosed finally as Brill's disease or Endemic Typhus Fever.

The first case I diagnosed as Influenza and waited for the usual symptoms to develop to confirm the tentative diagnosis. These symptoms did not develop. The patient was apparently very ill and I watched him closely. In my routine examination on the fifth day I observed a mascular rash over his chest and arms and abdomen which looked very much like rose spots and on pressure they would fade and return. The blood tests were negative to typhoid and paratyphoid. I remembered two years previously having seen at the same time two cases which had a similar rash and similar course of clinical symptoms which I

diagnosed as Typhus Fever. Both cases were connected with Feed Stuff Stores and I was told at the time by a Public Health Expert that we could always connect these few Endemic cases with such a contact. My impression at that time was that the disease was produced by the bite of the infected fleas from the Norwegian wharf rat and that this flea was transferred in the feed stuff in interstate commerce. Now I am told that the final step forward in the etiology of this disease as made by the United States Public Health Service, is that there exists in nature a permanent rodent reservoir for Endemic Typhus Fever in the rat and that the disease is transmitted to man thru the feces of infected rat fleas. As the flea bites he at the same time defecates. The person in rubbing the flea bite inoculates himself with the infected feces. This to my mind is the only way to explain my four cases.

From all historical accounts old world Epidemic Typhus Fever was a terrible scourge. In old English History during Tudor times there were great epidemics of typhus fever and it was then considered to be a disease of filth, war and misery. One historian (McLaurin) says probably if we could get at the real truth, throughout recorded history that Typhus had slain more people than any other Epidemic disease. It was then spoken of as the "Sweating sickness." It seems to have begun with the war of the roses and when Henry VII returned to London in triumph after the battle of Bosworth with his Typhus infected army and it's millions of fleas and rats the disease spread among the over crowded houses of the capital and high and low perished alike. Nobody seemed immune. In one week it took two Lord Mayors and six Aldermen and the Ancient University of Oxford closed it's doors and professors and students alike fled in common terror.

Sir William Osler in his 1910 edition of Practice of Medicine says Typhus Fever is an acute infectious disease of unknown origin. He quotes Hirsch as saying, "The History of Typhus is written in those dark pages of the world's history which tells of the grievous visitations of mankind by war, famine and misery of every kind." In England in 1875 there were one thousand four hundred and ninety nine deaths, in 1895 only 58 deaths. In 1897 there were only three cases of Typhus Fever in the London Fever Hospitals. Still Osler in his time considered it a highly contagious disease, stating that among 1230 physicians attached to institutions in Ireland 550 succumbed to this disease. Medical science has achieved a triumph in the disappearance of the epidemic form in most countries and in the intensity of the symptoms and the reduced mortality. All this improvement evidently due to better sanitation and a correct knowledge of the source of infection.

During the time that I was treating these four cases, I was very fortunate to receive a reprint from the Georgia Medical Association Journal by Dr. Mark S. Dougherty, Jr., of Atlanta, Ga. on Endemic Typhus Fever in Georgia. He says a review made of the charts of all patients dismissed from the hospitals in Atlanta with the diagnosis of Typhus fever from 1925 to January 1, 1934, shows the number to be 69. Of this number nine cases were doubtful and not included in his study. In 1933 six hundred and thirty seven cases were reported in Georgia. The disease seems to be more prevalent along the Coastal Country and radiate from port towns. For a five year period Atlanta reported 96 cases and Savannah, Ga., 339 cases. My four cases followed so closely the usual clinical course of the disease that I will not report the cases separately but will mention only the general course and any special developments. None of my cases were in the hospitals and I had to depend on home nursing and no regular records were kept, by a professional nurse. Only one case complained of prodromal symptoms and he said he had suffered headache and backache and general malaise for about a week. In all the cases the onset was sudden with a rapidly rising fever, chills, severe headache and some nausea. The headache was the most complained of symptom. In one of my cases it was so severe that I had to eliminate the thought of meningitis. Medicines don't seem to give much relief for this headache. All cases showed a complete anorexia. There was great prostration, insomnia and nervousness. One case had profuse sweats and I left off all antipyretics but I found these did not cause them but they were due to the disease. When the epidemic type was rampant

in England they called it the "English Sweat." The temperature reaches it's height about the 5th day. All cases showed a temperature of 104 degrees at some time during illness. The temperature would vary one to three degrees during 24 hours. Would run around 101 1-2 in the morning and then 103 1-2 to 104 in the afternoon. The rash is the most distinctive thing about the disease. It comes out from 4th to the 6th day and lasts several days. It shows up first on the lower chest and abdomen and then on the back. If the skin is hot it shows better. Some of it will fade away if the room is cold and the cover removed for examination. It spreads to the shoulder and inner surface of the arms and thighs. The rash consists of rose to dull red macules. One of my cases, the female, had a peculiar form of the rash which I could only find described in Osler's work. On the fifth day I could see it plainly under the skin just like looking through a film of oil and I promised her the rash would be out next day. It never did show up any plainer. Osler described this rash when he said it had the appearance of a "fine, irregular, dusky red mottling as if below the surface of the skin, some little distance, and seen through a semi-opaque medium." My first case had been free of fever three days when he was taken with severe pains in his left leg and suffered all night. He reported to me next morning that he had suffered with "Cholly Hoss." On examination I found that he had suffered a thrombus and was kept in bed several weeks longer by this complication. One patient, third case, was normal three days and then suffered a relapse that lasted about one week. The fever lasted in all four cases 14 days and all came down by lysis.

The Weil-Felix test was negative in all cases on first specimens of blood sent to the laboratory. Later in the disease I got a positive report in two of the cases in dilutions -1-50, 1-100-1-200-1-400. In the other two cases I sent the second specimen and it came back negative. This agglutination test is not of much aid in diagnosis unless made daily, as it may be negative one day and completely positive the next day. The cases that were negative to the test had the same clinical course and symptoms and the same disease that the two positive cases had. When the fever left the patients they felt better and convalescence was rapid in the uncomplicated cases.

Endemic Typhus occurs sporadically. The mortality is 1 to 4 per cent. It is not connected with filth or over-crowding and no respecter of persons or social status. Incubation period 7 to 14 days. It is claimed now that there is no evidence that it spreads from man to man. There are several contagious and infectious diseases with rashes from which it is necessary to differentiate. As all the books give a complete list of these I will not burden you. The main things for us, as Doctors, is to know that we have this disease with us yearly and be on the alert to recognize it, and as men with two eyes and a brain behind them to see if we can ferret out the information that may help to prevent the disease entirely.

THE SIMPLIFIED KETOGENIC DIET IN THE TREATMENT OF BACILLI INFECTION OF THE URINARY TRACT IN GENERAL PRACTICE

By
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Easley, S. C.

This subject is nothing new, but the object of this paper is to present a method by which a treatment of bacilli infections of the urinary tract can be carried out in general practice, and to show the simplicity of the treatment, so that it may be carried out in one's office.

It is offered as a relief for a great army of patients who suffer from these infections and who have not got relief from the usual methods of treatment.

We may consider that around eighty percent of all urinary infections are due to the colon bacilli(1) (Crane). This treatment is not intended to replace the surgical treatment of perinephric abscesses, obstructions of the ureter, or calculi, although some men have claimed to get relief by the use of this diet in certain cases pyelonephritis and infections caused by the presence of calculi.(2)

This diet is primarily intended for adults,

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but can be used in cases of children with pyelitis or cystitis.

The diet may be prescribed without detailed dietetic knowledge by the physician and can be prepared in the average home without special dietetic supervision.

The menus are so arranged that regardless of the items collected from the different groups, the daily intake of food will consist of carbohydrates, 15 to 20 grams; proteins, 35 to 50 grams; and fats, 300 to 325 grams. The vitamin deficiency need not be considered here as the patient is only kept on the diet for a short time. The menu also instructs the patient in detail how to choose his diet, and any patient of average intelligence can follow it.

The detailed chemical changes which this diet covers will not be discussed, owing to the limited time, but two conditions must be present in order that we get the best results with its use. First, sufficient concentration of ketone bodies, second, coincidential with this, an acidity of the urine of a ph. of below 5.3, as the successful use of the ketogenic diet is dependent on the bacteriostatic or bactericidal action of beta-oxybutyric acid at a certain degree of acidity.

Let us now look at the diet that will produce this ketosis. I will not read the entire diet, but will name a diet for one day, in order to show the type used. A copy must be given to each patient, so that he may work it out. The diet is as follows:

The Simplified Ketogenic Diet

GROUP A—EGG DISHES

1 Egg nog
Egg—1
Cream (40 per cent fat)—6 tablespoons
Water—5 tablespoons
Nutmeg—to taste

2 Scrambled eggs
Eggs—2
Cream (40 per cent fat)—7 tablespoons
Butter—3 teaspoons

3 Egg omelet
Eggs—2
Cream (40 per cent fat)—7 tablespoons
Butter—3 teaspoons

4 Egg custard
Eggs—2
Egg yolk—1
Cream (40 per cent fat)—7 tablespoons
Vanilla—few drops

GROUP B—SALADS

1 Lettuce salad
Lettuce—1-8 head
Mayonnaise—4 tablespoons

2 Lettuce and tomato
Lettuce—1-8 head
Tomato—1 small
Hardboiled egg—1 yolk
Mayonnaise—5 tablespoons

3 Combination
Lettuce—few leaves
Celery—2 hearts
American cheese (grated)—2 tablespoons
Mayonnaise—4 tablespoons

4 Asparagus
Asparagus—6 stalks
Lettuce—few leaves
Mayonnaise—4 tablespoons

5 Egg salad
Lettuce—few leaves
Egg (deviled)—1
Mayonnaise—4 tablespoons

GROUP C—CREAM DESSERTS

1 Bavarian Cream
Gelatin—1 teaspoon
Cream (40 per cent fat)—7 tablespoons

Whip the cream. Soak the gelatin in 1 teaspoon of cold water. Dissolve in 2 teaspoons of hot water. Add 2 drops of any flavoring. When cooled, add to cream. Place in mold and chill.

2 Gelatin

Make plain gelatin as in No. 1. Use 7 tablespoons of unsweetened whipped cream over it.

3 7 tablespoons of whipped cream, with or without flavoring.

GROUP D—BEVERAGES

Tea, coffee, or water, with 4 tablespoons of cream. If desired, this amount of cream may be used with two cups of beverage. Use no sugar or milk.

DAILY MENU

Breakfast—

1. Choice from Group A.
2. One choice from Group D.
3. 8 slices of thin, crisp bacon, or 4 tablespoons of cream (40 per cent fat).

Dinner and Supper—

1. One choice from Group B.
2. One choice from Group A or C.
3. One choice from Group D.

DIRECTIONS

1. Satisfactory results cannot be obtained unless this diet is followed as outlined. Even the smallest deviations may ruin the chance for success.

2. No food or beverage other than that listed may be taken.

3. Water may be taken in moderate quantities, as desired.

4. The chewing of gum or tobacco is not permitted.

5. No laxative other than that prescribed by the physician is to be taken.

6. Do not take any medicine other than that prescribed by the physician.

In the majority of cases a ketosis will develop in three to five days and the patient who develops a ketosis quickly will be more benefited than the one who develops it slowly. In those cases that do not develop a ketosis quickly, a glass of 40 per cent cream may be taken between meals; then if the patient does not develop the ketosis, you may suspect that he is not carrying out the diet.

Some patients will have a certain amount of nausea and a feeling of weakness while on the diet, but this is to be expected in some cases. Normal work and exercise may be carried out during the treatment. Water is not forced, but a moderate amount may be taken.

Several tests have to be run each day. First, daily tests of the urine for evidence of the ketosis, which is based on the test of diacetic acid in the urine. The test is run as follows: to an equal part of 10 per cent aqueous solution of ferric chloride add the same amount of the patient's urine. If a ketosis is present, a port-wine color will result. The second test, which should be run, is to determine the ph value of the urine, which should be below 5.5, but I have seen cases in which the ph was higher and still an improvement was noted. In order to determine the ph value of urine, a method is used which can be done in the office. To twenty drops of the patient's urine, add one drop of 0.04 per cent solution of chlorophenol red. If the color of the urine remains the same, it is safe to assume that the acidity is around ph 5.2. The pinker it turns, of course, the higher the acidity.

Microscopic study of the urine should be made every other day to see whether pus or bacilli are present.

The use of drugs in this treatment is varied. I will mention only the ones I have used in my cases. These were used only after an appearance of the ketosis. In those cases in which the acidity of the urine was above ph 5.2 ammonium chloride in the form of enteric coated tablets was given in the amount of 80 to 90 grains daily until the ph was lowered. The use of methenamine may help in some particular cases. Colon bacilli made by Krueger method were used in all of the cases. This is given hypodermically, as any bacterial antigen. No other drugs were allowed. Daily soap suds enemata were taken by each patient. Bacillus Acidophilus was given each day to change the intestinal flora.

Patients should not be kept on this diet for more than ten or twelve days, whether the results have been favorable or not. Several short courses of the dietary treatment are preferable to one long course. If microscopic examinations do not reveal the organism for three consecutive days, the diet should be discontinued.

There will be cases in which we do not get satisfactory results. In those cases we should search for some foci of infection, such as an involved prostate gland, urethral cysts, or infected urethral glands. When the prostate gland is found to be infected, gentle massage of the gland is given every other day.

In some cases where the cocci type of infection is associated with the bacillary type, neo-arsphenamine gives results.

There are two other types that do not respond to treatment and no explanation can be given for this. These are the group which will not develop a ketosis, and the one in which the ph

of the urine remains high in spite of the administration of large doses of some acidifying agent.

SUMMARY

1. From the literature and in my experience, we have a valuable addition in the treatment of cases of cystitis and pyelitis caused by the colon bacilli.

2. Owing to the simplicity of the treatment, every physician in general practice should be able to carry the treatment out in his office.

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SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

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SEPTEMBER, 1936

AMERICAN BOARD OF INTERNAL MEDICINE

One of the most far reaching developments in American Medicine, in all probability, is that of the new Board designed to certify specialists in Internal Medicine which begins to function actively with the first written examination in December, 1936. Successful candidates at the written test will be eligible for the practical and clinical tests in April, 1937. The fee for the examination is forty dollars. Application blanks may be secured by writing to Dr. Walter L. Bierring, 406 Sixth Avenue, Des Moines, Iowa.

It is pretty well conceded that a broad foundation in internal medicine is highly desirable for any medical student or physican, regardless of the specialty he may intend to pursue. The well known divisions of medicine and surgery have for a long time been recognized, and certain organizations like the American College of Physicians and the American College of Surgeons have done much to bring about higher standards of qualification. The general plan of this Board is not very different from that of some eight or ten other Boards of certification for specialists already established. In looking over the requirements one is impressed with the high standard to be demanded of the candidate.

This Board is an outgrowth of the activities of the American College of Physicians and the American Medical Association along this line. The examiners include men of the highest eminence in both the United States and Canada. The Certification Board for Surgeons is to be organized shortly also.

FOUNDER'S DAY AT THE MEDICAL COLLEGE, NOVEMBER 5

An important event every year in our State now is that of the celebration of Founder's Day at the Medical College of the State of South Carolina. The exercises usually include an address by an outstanding clinician, and this year it is a pleasure to announce that this man will be Dr. Reginal Fitz of Boston. The mere mention of his name brings to our minds the enviable traditions of American Medicine. More details will be given later, but the event should be looked forward to and placed on the calendar of every physician in South Carolina as one of importance to our State.

THE POST GRADUATE COURSE AT ANDERSON

As was anticipated, the Clinical Assembly held at Anderson was a marked success. About one hundred physicians were in constant attendance. The officers were reelected, and Ander-

son will be the place of meeting in 1937. Efforts will be made to include more largely Georgia and North Carolina, the field from which both teachers and graduates may be interested. This type of refresher course is now in the ascendency in this country and abroad. We have thus made a good start in South Carolina.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"READJUSTMENTS IN THE THORACIC CAGE AND ITS CONTENTS FOLLOWING TOTAL AND PARTIAL PNEUMECTOMY"

Recently additional light has been thrown upon the fate of thoracic cavities resulting from partial or total removal of a lung. Shifting of the mediastinum and the level of the diaphragm, dilatation of the remaining lung tissue, and changes in the conformity and size of the thoracic cavity are the recognized compensatory factors. However it has generally been considered that they are insufficient to effect a complete closure of a cavity of large size. Thus surgical collapse of the chest wall has been commonly resorted to—as a persistent cavity would be an ever present source of danger due to its likelihood of becoming infected. Another factor is that should these compensatory mechanisms succeed in obliterating the cavity, there might be so much displacement of the mediastinum as to interfere with the cardio-respiratory function. For this reason also thoracoplasty has been resorted to—to keep the mediastinum in its proper place.

In a study of 36 cases—10 of total pneumectomy, and 2 of post-traumatic atrophy of the left lung—Dr. William Reinhoff of Baltimore made some important observations concerning the obliteration of large pleural cavities. (Sou. Med. Jour. 29:445 May '36).

The compensatory factors aforementioned are of primary importance and are the first to take effect. The remaining lung tissue becomes greatly dilated—this Dr. Reinhoff distinguishes sharply from emphysema which is a disease process. Cavities on the left, unless very large, are likely to be taken care of completely in this way. The heart is rotated and the right lung extends actually into the left hemithorax both anteriorly and posteriorly. Such is not the condition in cavities on the right. Whereas there is some shifting of the mediastinum, the heart does not rotate as readily to the right, and apparently the left lung can not cross the midline. The result is that the major portion of the cavity has to be cared for in another way.

Immediately following operation there is an outpouring of serosanguinous fluid. The air collects at the top and is rapidly absorbed. The fluid very soon clots. Fibrin is precipitated and a scaffolding forms. Fibroblasts grow in from the periphery and thus organize the contracted clot. The result is a fenestrated labyrinth of connective tissue, with clear fluid occupying the interspaces. On X-ray examination it is difficult to distinguish this from lung parenchyma. It is in this manner that the pleural cavities, not compensated for otherwise, are obliterated.

The foregoing observations, while definite, have not yet been made upon a sufficient number of cases to be accepted as generally obtaining. Should they be, they will have a far-reaching effect upon thoracic surgery, simplifying certain phases of it. The post-operative effusion will be considered as a beneficent mechanism; no longer will aspiration be practiced in these cases to prevent infection.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 311 (30742)

Feb. 21, 1936

Case of Dr. Cannon

Student Able (reading):

A negro man, 43 years of age, admitted 1-9-36; died 1-13-36.

History (obtained from friend): Less than an hour before his admission to the hospital, the patient was apparently well and was working. Suddenly he stopped talking (and probably fell), was removed to a bed. 30 minutes later convulsive moments began, and the mouth was drawn to the left side. Later the convulsive movements stopped and the patient was admitted in a comatose condition.

No history of trauma, alcoholism, diabetes, epilepsy or any other illness.

Examination: Temp. 99, pulse 96; resp. 36; B. P. 175-60. A well developed, comatose male. Skin: dry and warm. Eyes: "Rt. eye scarred and opaque (bluish) with tumor of sclera. Left pupil irregular, constricted, does not react." Slight tremor of tongue. Teeth carious. Inguinal lymph glands palpable. Neck: negative. Chest: expansion equal, lungs clear. Heart: apparently not enlarged. Apical impulse diffuse. Systolic murmur (chart infers that murmur was apical). Rate slow, numerous extra-systoles. Abdomen: No abnormalities noted. Neurological: Left extremities slightly spastic, left eye turned up and out. KJ's positive on both sides, no ankle clonus or Babinski. No reaction to painful stimuli on left, reaction present on right.

Lab: Urine (1-11) S. G. 1.030; alb. 0, sugar a trace, acetone 0, casts 0, occasional leukocyte, RBC 0. Blood (1-9) Hb. 90 per cent (T), WBC 11,600, polys 70 per cent, lymphs 26 per cent, monos 4 per cent; plas neg. Thick and thin smear for plas (1-10) neg. Spinal Fluid (1-9): normal pressure, clear, colorless; cells 28 per cu. mm., lymphs predominating; globulin a trace, sugar 1 plus; colloidal gold 1112210000; Kolmer and Kline 4 plus.

Course: Temp. rose suddenly to 106 at 8 A.M. of 1-10, fell to 101.6 at 12 noon, then rose slowly to 106 on 1-12 at 8 A.M., remaining near that level until death. Pulse followed temp. closely. Resp. usually about 40, were 66-68 for last 12 hours. On 1-10 convulsions were generalized and continued at intervals of a few minutes all day. Face drawn to left side. On 1-11, ankle clonus was elicited on left. "Apparently a flaccid paralysis of left side of body." Face continued to twitch, but generalized convulsions ceased, patient remaining in coma. Spinal fluid on 1-11 showed dark, yellow-brown fluid under slightly increased pressure, with a few blood cells present. (Further study of this specimen apparently not made). 1-12 Rales over bases of both lungs. Ceased to breathe on 1-13-36 at 12-45 A.M.

Dr. J. H. Cannon (conducting): Mr. Goodlett, will you open the discussion?

Student Goodlett: We have the record of a negro man, 43 years of age, who had apparently been quite well until just before the onset of his present illness. This onset was very abrupt, and resulted in paralysis and convulsions. Examination disclosed a paralysis of the left side of the body, and of the right side of the face (since the face was drawn to the left). This gives us a crossed paralysis, localizing the lesion in the pons, at the level of the nucleus of the facial nerve. In addition, the cell count in the spinal fluid, and the colloidal gold curve suggest the presence of syphilitic disease of the central nervous system, and the spinal fluid Kolmer and Kline bear this out.

It seems to me, then, that we have a case of syphilitic disease of the meninges and probably of the cerebral blood vessels. I believe that the suddent onset of cerebral symptoms indicated a hemorrhage into the pons, probably on the basis of the vascular disease already present.

Dr. Cannon: You believe that syphilis was the cause of a cerebral hemorrhage. What

else might have caused this clinical picture?

Student Goodlett: He may have had a cerebral embolism from an old heart lesion.

Dr. Cannon: Why do you say an "old" heart lesion? How would embolism occur from an old lesion?

Student Goodlett: Possibly an old arteriosclerotic plaque broke off and lodged in the brain. Or, in case of a more recent and an active valvular lesion of the heart, a vegetation might have broken off and lodged there.

Dr. Cannon: Is syphilis a common cause of cerebral hemorrhage?

Student Goodlett: Not a common one, but it causes hemorrhage occasionally.

Dr. Cannon: How about thrombosis? Could it have caused this picture?

Student Goodlett: With thrombosis, the symptoms usually come on more gradually.

Dr. Cannon: Mr. Rutledge, can you add anything to the discussion?

Student Rtuledge: I differ with Mr. Goodlett in one point: I believe that syphilis is a common cause of cerebral hemorrhage. But I agree with him in the general analysis of the case, and my diagnosis is cerebral hemorrhage on a background of meningo-vascular syphilis. I do not believe that the onset could have been as sudden as this in cerebral embolism, and the area involved would hardly have been as large as the record here seems to indicate.

I saw the autopsy, though, and there was certainly no gross evidence of massive hemorrhage; a few small petechiae were noted, but no hemorrhages large enough to give these symptoms.

Dr. Cannon: Do you believe that hemorrhage is a more common manifestation of meningo-vascular syphilis than thrombosis is?

Student Rutledge: No, I believe that thrombosis is more common, but I do not believe that hemorrhage is uncommon.

I think the essential lesion here was located in the pons. That would easily account for the fever, because of its proximity to the heat center. That explanation is hardly necessary, however, as the fever could be due to the convulsions themselves.

Dr. Cannon: Does anyone else care to comment? (No answer).

Dr. Lynch will present the autopsy findings now and leave time for discussion after the autopsy report.

Dr. Lynch: There was little to be seen grossly at autopsy, the diagnosis in a case such as this depending on the histological findings.

You see here a section of brain (using microprojector), showing a medium-sized blood vessel that is greatly dilated and contains a recently formed thrombus. It is surrounded by a well-defined collar of lymphocytes. The same appearance is noted in sections taken from all parts of the brain, indicating that the process was quite diffuse. Numerous petechial hemorrhages can be seen, and these were noted grossly, and given as the finding on which the diagnosis of encephalitis was made grossly. Within the meninges there is a similar picture, as you can see; here the meningeal blood vessels are surrounded by lymphocytic cells. But the meningeal involvement in this case appears minor when compared to the relative severity of the inflammation within the brain. In addition, evidences of degeneration can be made out within the various nerve-cell bodies, although that cannot be demonstrated with a projector.

It is thus easily established as a case of encephalitis. But what is the nature of the encephalitis? It resembles in almost every respect the appearance of the brains from the 1918-19 epidemic of encephalitis. The recent epidemic in St. Louis was usually similar to this, although the lesions were seldom so widespread throughout the brain. Frequently we hear that the type of encephalitis which occurred in the epidemic of 1918-19 is no longer with us. But quite frequently we see a sporadic case which is entirely similar to those other cases. A few years ago we had a number of such cases in close succession here in Charleston, although there were not enough cases to call it an epidemic.

He had positive serological evidence of syphilis, and at autopsy he was found to have a mild syphilitic aortitis. While syphilitic encephalitis is occasionally quite similar to this case on the basis of the microscopic findings, I am inclined to believe that this was a sporadic case of lethargic encephalitis, occurring in a syphilitic individual. The sudden onset in the clinical part of the picture, and the distention of the

blood vessels, the petechial hemorrhages and the marked edema of the brain in the histological part, make me believe that this was not syphilitic.

In addition to his encephalitis, this patient also had an early lobar pneumonia, the lung being in a well-established stage of red hepatization. This would indicate that his pneumonic inflammation probably began at about the time his sudden cerebral symptoms occurred. I am speculating on the possibility that this man had the virus of encephalitis in his brain, but lying latent, and that the acute infection caused the latent cerebral infection to become active. This is the explanation that is commonly given for those cases of typical encephalitis that occur in children following even the milder contagious diseases, as mumps, chicken pox, measles and pertussis. The so-called "post-vaccinal" encephalitis is explained in this manner by some. Of course I do not believe that the pneumococcus itself caused the encephalitis, as the pneumococcus would have caused the suppuration; but I am inclined to believe that pneumonic infection permitted the encephalitis virus to stir itself from a latent stage and become active.

I would like to hear some clinical discussion of the anatomical findings in this case.

Dr. Cannon: Since this patient was on my service, I guess I must try to defend my diagnosis of syphilitic vascular disease of the brain, with hemorrhage. The suddenness of onset is very difficult to correlate with any diagnosis other than hemorrhage. I am afraid that I would make the same error if I had such a case again. But we are taught a worth-while lesson from this case: event if the inflammatory process causing the symptoms is diffuse, there may be localizing symptoms to make one suspect a focal lesion.

Dr. Wilson: I went over this patient on the wards in one of my clinics with the class. We were discussing the different causes of hemiplegia, and decided that this man's hemiplegia was a result of vascular disease and cerebral hemorrhage.

When we err, we should always ask ourselves the question, Can we avoid this error next time? The inconsistency of the findings should have made us suspicious of something unusual in this case, but instead it made us suspect that the original examiner, who made the record, had made incorrect observations. With hemorrhage, spasticity usually comes on several days after the onset of symptoms; here it was present when first seen. Positive ankle clonus is usually present when spasticity has developed; here flaccidity followed spasticity, and the ankle clonus was obtained during the time of flaccidity.

I have seen a number of cases of encephalitis in which a hemiplegia developed, but prior to this case I had never had an autopsy on such a case of encephalitis.

I have seen the symptoms of encephalitis come on very abruptly, but the symptom at onset is usually headache.

The blood pressure in this case would seem to suggest an insufficiency of the aortic valve, because of the high systolic pressure and the low diastolic pressure. Since there was no evidence of disease of the aortic valve at autopsy, I am at a loss to explain this blood pressure reading; possibly it would have been different if it had been taken several times.

Dr. Chamberlain: Since I was not here for the early part of this conference, I could not take a part in the discussion prior to the presentation of the autopsy findings by Dr. Lynch. And my statements now may be somewhat biased.

But there is much in the record to make us question a diagnosis of cerebral hemorrhage, although the suddenness of the onset would certainly make us consider that diagnosis closely. The variation in the reflexes and in the muscular condition of the extremities is certainly not what we would expect in a hemorrhage severe enough to cause coma. Rather we would expect complete flaccidity and a total loss of the reflexes in this stage, as Dr. Wilson pointed out. Convulsions can only be explained by a lesion in or near the motor cortex. But the deviation of the left eye, and that eye only, to the left and upward, suggests that either the left abducens nerve was badly stimulated or else the left oculomotor nerve was paralysed distal to the nucleus. In either case, such a lesion would have to be well below the cortical area. Whether the facial paralysis was of a cortical type or not cannot be determined from the record; if it was not of a cor-

tical type, it would be further evidence of the diffuse character of the lesion.

Since the various parts of the neurological picture cannot be explained on a localized lesion in one part of the brain, it becomes apparent that the lesion must have been a diffuse one, of the nature of an encephalitis or a meningo-encephalitis.

Dr. Lynch has pointed out that occasionally any one of many bacterial agents or their toxins may go haywire and be followed by encephalitis, and the subsequent pictures of encephalitis may be quite alike in all respects, no matter what the inciting agent. Experimentally, an acute type of encephalitis can be caused in the rabbit by inoculating him with the serum from an ordinary fever blister. Dr. Lynch's thesis as to the possible cause of the encephalitis seems to me to be as logical as any.

OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., GREENVILLE, S. C.

PRENATAL CLINICS OF THE MATERNAL AND CHILD HEALTH DIVISION OF THE STATE BOARD OF HEALTH

The Division of Maternal and Child Health of the State Board of Health has organized and is conducting prenatal and well children clinics in most of the counties of South Carolina. The director of the division is Dr. R. W. Ball, formerly connected with the county health unit of Richland county. He is deeply interested in the work of his division, and is using every effort to make this work of real benefit not only to the indigent women and children of the State, but to the doctors as well.

The writer has had considerable opportunity to observe the workings of this new division of the State Board. He has conducted a number of the prenatal clinics in the Piedmont section of the State. Dr. R. C. Bruce, president of the State Medical Association, appointed him to represent that body on the Advisory Board of the Division of Maternal and Child Health and he has sat with the board at their first quarterly meeting. Furthermore, he has had a number of conversations and some correspondence with Dr. Ball, the director. These various contacts have enabled him to reach certain conclusions concerning the work as it is now organized, the ultimate aims of the department, the benefits that will accrue to the women of the State, and finally the effect that this work will have on the medical profession.

First of all, it should be realized that the work of the division is in its infancy and that it began without personnel and with a plan which was only in outline. The organization is being improved day by day. The personnel is being trained and improved, and what it is today is no true indication of what it will ultimately be. The work that is now being done will be improved upon, its scope will be broadened to reach more women and children, the educational features will be stressed more and more, and the cost per patient reached will be materially lessened.

The writer's first impression is that the director is earnestly trying to secure the cooperation of the doctors of South Carolina. He is trying to protect their interests, and he is giving every suggestion made by any one of them most careful consideration. He has no desire or intention of taking paying practice away from them, and he wishes to have them to cooperate in the conduct of the clinics. County Medical societies have been asked for suggestions, and these suggestions have been followed so far as practicable since the inauguration of the program.

The clinics are carefully worked up in advance by field workers. The prospective patients are called upon individually, and their financial status is investigated. None but the truly indigent, who would otherwise receive no prenatal care except in the case of catastrophe,

are allowed to attend the clinics. More than this, where defects are found that seem to require medical treatment, no such treatment is given, the clinics being entirely diagnostic. The patient requiring treatment is sent to the physician of her choice with a statement of the defect found, and the case is turned over to him for treatment. Considering the true indigency of these women, the writer feels that this is carried to an extreme, and that the practice tends to add to the burden of the practitioner with little or no chance of remuneration. However, doctors are sensitive of their prerogative. Only recently he heard a doctor who already has to carry a large burden of free practice quoted as having said that if any woman in his practice attended one of these free clinics, she need not call on him to deliver her. Such an attitude is unfortunate. So long as only truly indigent women are admitted to these free clinics, and so long as only those who are receiving and will receive no prenatal care unless they are so admitted are given that privilege, neither the financial return nor the prestige of any doctor will be hurt. These postulates are seemingly being carried out in a meticulously careful manner.

Some criticism is being expressed with regard to the professional personnel of the clinics. One can well understand this, and yet it is the writer's opinion that this would be more quickly and more satisfactorily worked out if the local doctors in those communities where the clinics are being held would show a greater tendency to cooperate in its solution. The attendance of local doctors at the clinics conducted by the writer has in most instances been occasional and brief. There appears to be no general interest in them. One surely could not expect to be assigned the conduct of the clinic until there is evidenced a willingness to cooperate. Already in twelve instances a local doctor has been assigned to well baby clinics, but only seven local doctors, so far as the writer is aware, have shown enough interest to warrant assignment to prenatal clinics. It is hoped that this will soon be remedied. As the plan now is, a doctor becomes eligible for such assignment when he has attended two clinics conducted by a specialist.

The definitely educational side of the program has hardly begun. So far this has been more coincidental than purposeful. The field workers in inviting women to come to the clinics have discussed with them the importance of prenatal care. These conversations set up, as it were, foci from which information, doubtlessly more or less garbled, permeates. The few doctors who have irregularly attended the clinics have seen what constitutes a minimumly adequate prenatal examination. But this is not enough. At every clinic the patients should be given a simple lecture on the hygiene of pregnancy either by the doctor or by the nurse. Furthermore, there should be some effort made at community mass instruction, open not only to the indigent who have been contacted, but to every one. The free clinics should not be mentioned at these meetings, but the stress should be put on the idea of seeing one's doctor early and regularly when pregnant. While the program has been deficient in this respect, plans are already formulated to begin such a program. The writer wonders if a plan could not be worked out so that public meetings could be sponsored by the local county medical societies. The program could be arranged either wholly or in part by Dr. Ball's office. No doubt Dr. Ball would be glad to cooperate in such a plan. If the county society did not care to take up such a program, there is an excellent opportunity here for the woman's auxillary to do something constructive for the community.

This is not truly State medicine. True it is an opening wedge, but one that is still largely under the control of the organized medical profession. Whether it shall continue under such control remains to be seen. It will not and can not be, unless organized medicine shows an active interest in it and assists in its direction and guidance. Quoting from the bulletin, "Working Details of the State Plan for Maternal and Child Clinics," "The responsibility for treatment of abnormalities found at clinics lies with the medical profession. If the local physicians do not treat these patients, then naturally it will ultimately become a State problem. It is not our desire to enter the field of curative medicine; our work is entirely preventive, and with the cooperation of the local physicians it will remain so." Are the doctors of South Carolina too blind to see or too indolent to seize the opportunity that is here?

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SOME BEDSIDE OBSERVATIONS ON THE DYING

By
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Because life, notwithstanding its tribulations, is glamorous, an exciting adventure; because it binds us by ties of love and duty to the things of this earth; because permanent obliteration of our identities is an unbearable thought, and because through lack of intimate experience we neither know the anguish that accompanies death nor the terrors that lie beyond it, we of the human race intensely desire to live as long as possible. To accomplish this end we have expended a prodigious amount of thought and ingenuity.

Confronted in its beginning by the apparently inexorable law of nature that all who live must die, our race refused to be bound by it. We continued, and still continue to hold the instinctive hope that some day, and in some way, this law might be annuled. Accordingly we began at once to lay plans for its downfall. After simplifying the problem by dividing ourselves into two entities, body and soul, we concentrated on the rescue of the latter, considering it the most important of the two. Body, we left to its fate until a later time.

Our success in the preservation of our immaterial selves, our souls, was as brilliant as it was easily achieved: soul, we postulated not only survives the body but lives forever, being immune to all of nature's destructive forces. Having devised this unique premise, we then established for its defence an impregnable fortress which we called Religion. Thus by one glorious maneuver we removed personality, our most cherished self, beyond the realm of death and made it as permanent as God himself. Having completed this task 1936 years ago, we next turned our attention to the rescue of the body.

We are concerned today with the fate of our material selves, our bodies, in whose behalf our efforts have so far met with but puny success. Body plainly and palpably dies, disintegrates, and returns to dust. In two thousand years of intensive endeavor we have succeeded in adding but ten years to its natural span of life.

As physicans daily reminded not only of the somatic transiency of life, but also of the impotency of our efforts to prolong it, we may well ask ourselves the question: is the eternal contest with death worth while? Is the faint hope for a large success in some remote century of the future sufficient incentive to continued labors? Our answer given in terms of melancholy experience might well be a negative. But to give the answer is not our privilege. We are the appointed agents of two billions of people who by word and deed indicate that they desire us to carry on. The love of life, forever immanent in the breast of man, will not despair: it places its destiny in our hands with confidence and hope.

To acquit ourselves honorably in this high office we must not only acquire a profound knowledge of the processes of life, but also (and equally important) we must try to comprehend the nature and mechanism of its enemy death. In the first of these requirements we are and have been diligent. The literature of medicine comprises vast volumes on the structure and functions of the *living* body in both healthy and diseased states. Much has also been written concerning the state of the *dead* body. But

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scientific studies on the *dying body* are woefully inadequate. It is as if the innate fear of the dying, so pronounced among primitive peoples, has intimidated the hand of science, and caused it to tremble and withdraw. Surely there is no better place to try to unravel the mystery of death than at the bedside of one who is experiencing it. Having this conviction and knowing little of practical value about the onset of death, I began fifteen years ago to make bedside notes on all the deaths I witnessed, which last year reached the total of two hundred fifty. The observations, opinions, and conclusions hereafter expressed are based upon these notes and upon a review of the available literature.

THE NATURE OF DEATH

The phenomenal progress made by medical science has not done away with the mystery that enshrouds death. We have a few clues, that is all: and they come from the reasearch laboratory rather than from the bedside. Crile believes he has produced experimental proof that *life* depends on an adaptive difference in electrical potential "between the brain and the other organs and tissues, especially the liver." Conversely "*death* is the absence of a difference in potential—final equilibrium." This electrical charge, he finds, is on the films of the cells. It is created by oxidation, and in turn helps to cause oxidation. Further study of his work engenders the feeling that this electrical energy, which is the equivalent of life, is inherently perpetual, and finally disappears only because the cellular batteries of the body, through chemical changes, become incapable of retaining it.

That life is inherently immortal appears to have been proven by the famous experiment of Alexis Carrel. In this experiment Carrel has kept a piece of chicken heart alive and healthy for twenty-four years—six times the normal life-span of a chicken. At the present time by the aid of a special pump devised by Colonel Charles Lindbergh he is meeting with success in keeping whole organs alive after they have been removed from the body. However, notwithstanding the implications of this achievement, Carrel holds no hope for the final banishment of death:

"In the same manner as the body is limited in space, it has temporal frontiers. Since the time marked by a clock is recorded within all living beings by irreversible changes, the conquest of death is unthinkable."

The irreversible changes of which Carrel speaks are, he believes, largely of a chemical nature.

By combining the conclusions of Carrel and Crile we arrive at this definition of the nature of death: Death is complete and permanent cessation of vital functions, brought about by *irreversible electro-chemical* changes in the cells of the body.

THE PROGNOSIS OF DEATH

A generation ago the older physicians took pride in their ability to predict the time of death. Many of us have seen a colleague dramatically pronounce the patient's doom while relatives and loved ones stood by in sorrowful and credulous awe. We rarely do it that way any more, and in consequence save ourselves occasional embarrassment. How many people are there now alive who were "given up to die" years ago? That blessed endowment of all living tissue, the natural tendency to recovery, plus an obstinate and combative spirit, has humbled many a pompous doctor who knew his disease but not his patient. Even in the so called fatal diseases it is risky to give an unqualified prediction of death, unless it be close at hand. I am personally acquainted with two victims of pernicious anemia who received such a sentence from capable physicians. The brilliant discovery of Minot and Murphy rescued them a few months later.

To venture a prediction as to the *time* of death is particularly hazardous. I once had the mortifying experience of seeing my patient resume breathing and live for ten minutes after I had pronounced him dead. Not once, in all the deaths I have witnessed, has it been possible for me to say on what stroke of the clock life took its departure. Death is a gradual change, subduing first the vital organs, especially the heart and brain. Last to succumb are the epidermal structures. The hair and the nails not only live but actually continue growth for several hours after somatic death.

Certain signs and symptoms are alleged to be dependable forewarners of approaching death,

and clinicians have grouped and paired them in an attempt to bring exactness to the art of prognosticating the end. The result is rules and aphorisms, most of which, in my hands at least, have been unreliable and confusing. For example:

With a diastolic blood pressure of 130 *or more the life expectancy does not exceed three years.*

Six years ago I found in my practice twenty patients whose diastolic pressure exceeded this figure. Twelve are now alive, five are dead, the status of the other three unknown. I now have three patients whose diastolic pressures have constantly been above 130 for ten years.

Gibson's rule: *In pneumonia when the blood pressure falls numerically below the pulse rate death is to be expected.*

Having found that the blood pressure falls below the pulse rate in most cases of severe pneumonia, particularly in young people, I no longer pay any attention to their relative positions. The value of Gibson's rule is approximately the same as that of Deaver's "fair, fat, and forty" saying.

Pulsus Alternans, gallop rhythm, Cheyne-Stokes respiration, loss of sphincter control, subsultus tendinum and carphologia, disappearance of the deep reflexes, disappearance of the radial pulse, etc., are all of grave import but not necessarily indicative of death. In serum sickness I once saw the radial pulse absent for six consecutive hours, with recovery. Recently a child ill with scarlet fever had gallop rhythm for two days, absence of the radial pulse for two hours, but recovered. Who has not seen recovery from shock, syncope, hemorrhage, and coronary embolism despite the temporary disappearance of the pulse?

Another rule I learned and had to forget: *In typhoid fever, when the graph of the temperature coming down crosses the graph of the pulse going up, hemorrhage is indicated.*

Hemorrhage, like syncope, invariably slows the pulse, not only in typhoid fever but in all other conditions in which it is profuse enough to depress the blood volume.

The explanation, I take it, is that in the presence of a low blood volume the heart fills slowly, and, for efficiency's sake, contracts slowly. A rapidly contracting heart, would in these circumstances propel such a small quantity of blood that there would be no pulse at all. Only after the blood volume has been restored either by dehydration of the tissues or by administration of fluids does the pulse increase in rate, and this is usually too late to be of diagnostic importance.

Seneca's physician found *medatatio mortis,* the sense of dying, to be an ominous symptom, but it is not a dependable one. Ryal and others have shown that it is the result of a vascular crisis, which may or may not threaten life. It can be ignored, however, only in young people and in those of neurotic disposition, for death at times does announce its approach to the victim.

Believing that electrocardiographic studies might reveal the presence of death before it could be seen clinically I had tracings made on two moribund individuals. In both instances electrocardiographic death and clinical death were almost simultaneous. However Hanson and others in a study of twenty-five cases found that an average time of five minutes elapsed between clinical death and the final complex. In one instance this interval was thirty-five minutes. Levine and Matton reported a clinical death from Stokes-Adams disease in which there was asystole for five minutes. Following intracardiac injection of adrenalin the patient recovered and was able to leave the hospital.

To me (and I suspect to most clinicians) the most dependable sign of approaching death is the facies so well described by Shakespeare, and before him by Hippocrates. When Hostess saw Falstaff "fumble with the sheets, and play with flowers, and smile upon his finger's ends" he "knew there was but one way; for his nose was sharp as a pen." The ears look bloodless and turn their lobes out; the eyeballs glaze with film, a waxy, cadaverous pallor steals over the face, and though the patient may still breathe, the observer suddenly gets the eerie and repulsive feeling that he is in the presence of a living being from whom personality has fled.

MIKULICZ' DISEASE

By
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A peculiar disease in which there is enlargement of the salivary and lacrimal glands was described by Mikulicz before the Society of Scientific Medicine of Konigsberg in January, 1888. Leucutia and Price quote the following from the minutes of the meeting. "Both lacrimal and salivary glands were symmetrically tumefied, resulting in marked swelling of these organs and considerable disfiguration of the face. The tumors developed gradually, and they were at the time of the examination of a hard consistency, painless and without any manifestations of an inflammatory reaction. No other pathological change could be demonstrated in the patients affected with these tumors." Smith and Bunk state that the literature contains about 100 cases of the disease proper up until 1928.

The most practical classification seems to be that of Schaffer and Jacobsen in which, (1) Mikulicz' disease is divided into (A) familial, (B) Mikulicz' disease proper, while, (II) Mikulicz' syndrome is further classified as (A) leukemic, (B) tubercular, (C) syphilitic, (D) lymphosarcomatous, (E) toxic, (F) gouty, (G) febris uvioparotidia, sub-chronica. In short, under the term Mikulicz' syndrome many other diseases have been described which have their manifestations in the parotids. In going through the literature one is impressed by the number of cases which are reported as Mikulicz' disease but which in reality are either leukemic, tubercular, or syphilitic. Mikulicz' disease proper is a rare disease, and should include only those cases of non-inflammatory swelling of the lacrimal and salivary glands without involvement of the lymphatic system and without alteration of the blood.

Etiology: The cause of the affection is not known. If syphilis, tuberculosis, leukemia, or Hodgkins disease can be demonstrated, the disease comes under the classification of Mikulicz' syndrome and it is not true Mikulicz' disease. John reports four cases of enlarged parotids associated with diabetes, but no mention is found elsewhere in the literature of a diabetic association. Cases are reported from early life through old age, both men and women.

Symptoms: The symptoms, as described in the literature, consist of enlargement of both parotids and both lacrimal glands, which is painless and non-inflammatory, a dryness of the mouth, and of the conjunctival sac, which frequently causes conjunctivitis and occasionally corneal involvement. General health is described as being unimpaired. The blood picture is normal, the spleen is not enlarged and other glands are not affected except through occasional involvement of the other salivary glands. Cases have been reported in which there was involvement of the lacrimal glands alone and of the salivary glands alone. The disease is evidently of long duration, Lane reporting the average to be 7 1-2 years.

Pathology: Smith and Bunk state, "It is a disease of the lymphoid tissues of the lacrimal and salivary glands with secondary destruction of the prenchyma. It is probable that this tissue, for the most part solitary nodes in and about the walls of the ducts, is subject to diseases quite like those of lymphoid tissues elsewhere in the body."

Treatment: Formerly the iodides and arsenic were recommended. At the present time x-ray therapy seems to be the choice.

Case Report: Mrs. S.R.W., age 61, first seen on May 27, 1936.

Complaint: Swelling in front of and below both ears, aching, soreness, and shooting pains through the head, ears, and neck for about 3 years. Dryness of the mouth with aching in the eyes.

Family history: Negative.

Past history: Had good health in childhood. Has never been strong, though she has never had any serious illness. Does not think she has ever had mumps.

Present illness: Began as far as she can determine 3 years ago. She was very sick in bed for 2 or 3 weeks. The glands in front of the ears swelled, and the eyes became red and very painful and inflamed. Just following this she had a right lacrimal sac removed and shortly thereafter, the left. The eyes got better temporarily but have continued to give her trouble at intervals since that time. The parotids have continued swollen. The mouth

has been dry over the whole period. Her general health has been very poor, and she has now come to the point where she does not sleep without taking sedatives. Has lost about ten pounds in weight.

Examination: A woman, age about 60, in evident distress. There is conjunctival redness and injection, both eyes, with shreds of pus in the conjunctival sac. The lacrimal glands are not enlarged, as far as can be determined. Both parotids are enlarged, the right one most markedly, with slight tenderness in the left. The lymphatics underneath the angle of the jaw may be slightly enlarged. The sublingual salivary glands are apparently normal. The parotid ducts are easily probed and no foreign body found. A stringy gelatinous mucoid material is expressed from the ducts through pressure on the glands. X-ray shows no stone in the parotids. The left ear canal shows an abrasion with crust formation and is very tender. Blood Wassermann negative. Blood count shows red cells 3,900,000; hemoglobin 73; white cells 7,800; polys 72; lymphocytes 26; mononuclears

2. Urinalysis was negative.

Diagnosis: Mikulicz' Disease Proper.

Treatment: She was put on Fowler's solution. Sodium cacodylate was given intravenously. At the same time she was referred to Dr. Frank Wrenn for x-ray treatment of the parotids. The swelling has decreased under x-ray therapy, but I am doubtful if there is any improvement in the general condition.

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THE EARLY DIAGNOSIS OF ACUTE APPENDICITIS

By
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Appendicitis is a clinical entity of vital importance to the practitioner not only because it is the commonest surgical condition in the abdomen—but also because it contributes more to the general mortality than any other surgical condition. Since appendicitis is primarily a disease of young adults, this mortality is more to be regretted than that of people dying at the cancer age. It is also largely a preventable mortality, and while the quality of surgical treatment plays some part, the essential factor in lessening deaths from this cause is prompt and accurate diagnosis.

The etiology of appendicitis has not been conclusively established—and there are too many probable factors to mention at this time. It is to be suspected at any age—though a great majority of the cases occur between the ages of 5 and 25 years. Suffice to say that attacks usually come on without warning and without known cause in individuals during normal health.

The pathology of appendicitis consists of inflammation of the organ with its attendant sequelae and complications: suppuration, engorgment, obstruction of its lumen with rupture, obstruction of its blood supply with consequent gangrene, localized peritonitis or abscess formation, or spreading peritonitis.

Symptomatology: From the variety in its pathology, it can be seen that the clinical picture of appendicitis and its complications is a varied one.

The essential problem is the recognition and adequate treatment of inflammation while the process is still limited to the appendix—and before complications occur. However, this is, in actual practice, very difficult to accomplish, in part because the symptoms in certain cases may be deceptive, in part because indifferent individuals may not call for medical attention until infection has reached an advanced stage. We must, therefore, be prepared to recognize appendicitis in all stages.

Appendicitis ordinarily occurs during normal health, without prodromal symptoms, although

it may be preceded by a feeling of malaise, loss of appetite, or vague abdominal discomfort.

The first and foremost symptom is PAIN which is usually of moderate severity, referred diffusely to the region of the umbilicus. It is usually continuous, with varying intensity—and may be colicky or cramplike. Frequently the pain is relatively mild, rarely does it approach the severity of renal colic. The pain is usually followed after an interval by nausea and vomiting; however, these may be absent, especially in young children—and this eventuality should be borne in mind.

Within a few hours the pain tends to localize in the right lower quadrant, and the diffuse pain in the mid-abdomen diminishes. This shift of pain is peculiarly characteristic of appendicitis. The temperature and pulse rate usually increase to a moderate degree, running higher in children than in adults; however, a temperature over 102 is unusual. Severe inflammation in children may cause a temperature up to 103 or 104 but rarely, and a temperature of 104 or over should make one suspicious of another condition. A normal temperature and pulse does not rule out appendicitis. Accompanying the temperature is a leucocytosis of moderate degree, between 15,000 and 20,000. Again the rule is broken in children, where the leucocytosis in purulent inflammation may be from 15,000 to 30,000. A child admitted here a week ago with ruptured appendix showed a count of 34,000 leucocytes. A thrombosed or gangrenous appendix is not infrequently accompanied by a normal blood count.

The order in which these symptoms appear is important. The usual sequence is pain, vomiting, fever, and leucocytosis. If the fever and nausea precede the pain, a diagnosis of appendicitis is very doubtful. Here again, however, it is to be remembered that child's history of sequence is often unreliable.

Ordinarily there is constipation due to nature's attempt to splint the bowels. Rarely there is diarrhea. A severe diarrhea is sometimes present in appendiceal abscess. Chills are rare, and a chill at onset should make one suspect acute infection elsewhere. It has been noticed that patients with appendicitis are seldom interested in food.

There may be increased urinary frequency, especially if the appendix lies adjacent to the ureter. In these cases the pain may be indistinguishable from that of renal colic. However, examination of the urine will usually rule out the kidney pathology. Recently the writer mistook an acute appendix for ureteral colic, due to the pains radiating to flank and right testis, and testicular tenderness.

On inspection it may be noted that the patient unconsciously holds the right leg somewhat flexed in order to relieve tension in the right lower abdomen. The respiration may be costal rather than abdominal. On palpation there are with few exceptions local tenderness and increased muscular rigidity over the right lower quadrant. This tenderness may be marked or slight, but is usually definite. This is without doubt the cardinal sign of appendicitis.

It is far safer to suspect appendicitis when there is acute tenderness anywhere in the right lower abdomen. There are a few deep lying appendices where the tip lies in the pelvis, and tenderness can only be elicited by rectal or pelvic examination; thus the importance of such an examination in any case where there is any doubt.

Ordinarily the disease is clinically well marked a few hours after onset, and often the diagnosis can be made within four to six hours after initial pain. Remember that appendicitis is the commonest source of acute abdominal pain associated with nausea, constipation, and localized tenderness occurring in young adults. The diagnosis depends on the accurate interpretation of a few essential facts in the history and physical findings.

It is well in taking the history of any acute abdominal condition to focus the patient's mind on the beginning of the attack by asking him what he was doing when the pain came on. This brings out whether the onset was sudden and sharp or gradual. Next, inquiry should be directed as to the effect of the pain; did it make him lie down, double up, or was he able to carry on? After this he should be urged to relate what happened in chronological order, using enough questions without leading him.

Diagnosis ultimately depends, however, on the interpretation of the physical examination. It is essential to determine at the outset whether

local abdominal tenderness and true muscular spasm exist. Palpation of the abdomen should be begun very gently, at a distance from the expected site of the lesion, comparing muscular tension at corresponding levels on both sides of the abdomen. The degree of pressure necessary to produce pain is carefully noted. It is most helpful to distract the patient's attention from the examination, carefully watching his facial expression for clues as to the amount of pain elicited. I have seen patients steadfastly deny they felt any pain, probably from fear of operation, only to give away the facts by facial contortions. Children will do this sometimes for no explicable reason. It is also well to have nearest relatives out of the room, as patients often disguise their feelings before their families. Do not confuse real sustained muscle spasm with voluntary contractions due to rough palpation. It is not superfluous to repeat that extreme gentleness is necessary in all palpation. Gaining the patient's confidence will often mean the difference between a hazy and a complete examination. Posture of the patient is an important point. Frequently he lies with one leg drawn up, or walks with a stoop, favoring his side to that extent.

Skin hyperesthesia is frequently present over the right lower quadrant in acute appendicitis, and is a good diagnostic sign. It may be elicited by stroking or pinching the skin, and comparing the amount of reaction on the two sides.

Palpation with one finger pressed deep will often elicit one small spot of tenderness which could not be shown when the whole hand was used.

Peritoneal inflammation can be demonstrated by a gradual pressure of the palpating hand, followed by sudden removal of the hand, giving the classical rebound tenderness.

The diagnosis in typical cases is easy and straightforward. If we can obtain a suggestive history of pain, with nausea, find slight but definite evidence in temperature, pulse, and leucocytosis of a septic inflammatory process, and confirm these observations with an unmistakable degree of local tenderness and muscle spasm in the right lower abdomen, we are justified in diagnosing appendicitis. Having reached this conclusion, operation should be advised immediately. If there is doubt, the only safe measure is to have a surgeon's opinion as soon as possible. Here I'd like to call attention to three cardinal DON'T'S:

1. Don't give food or opiates.
2. Don't give a laxative.
3. Don't delay.

Differential diagnosis is essential mainly to rule out conditions in which laparotomy is contraindicated; for while confusing pneumonia and appendicitis may be a fatal mistake, the confusion of appendicitis and salpingitis or twisted ovarian cyst results only in technical error, easily corrected after incision. Thus the main differential lies in deciding whether or not it is a surgical condition. Therefore I shall mention here only the medical entities often confused with an acute abdomen:

1. Pneumonia.
2. Typhoid fever.
3. Gastro-enteritis
4. Influenza.
5. Lead colic.
6. Tabes Dorsalis
7. Renal Disease.

In the event that appendicitis goes undiagnosed in its early stages, the following course is often seen. In the average case the signs of the disease become accentuated in the second 24 hours. Local tenderness and spasm increase and affect a wider area; the febrile reaction and leucocytosis continue or become more marked, and the bowels become more constipated, and vomiting may continue. If a laxative has been given, the doctor may mistake the sudden relief from pain attendant on perforation for improvement, and thus be lulled into a false sense of security which is rudely disspelled when he feels the marked weakening of a rapid and thready pulse, and notes the gradual distension of the abdomen, the shallow rapid thoracic respiration, and the dilation of the alae nasae, and the change from local to diffuse tenderness and rigidity. In extreme cases rigidity is entirely replaced by distension, and the pinched anxious expression tells all too vividly of the approach of the end. It is needless to say that in these last types of cases, those in extremis, surgery is of little or no avail.

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BLOOD TRANSFUSION

By
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The idea of giving strength and vigor by giving blood dates back to 1492, when an unnamed Hebrew physician sacrificed three youths to give blood to Pope Innocent VIII. In 1615 Libavius described blood transfusion with the use of two fitting silver tubes. The first concrete advance was made by Harvey, when he discovered the circulation of blood in 1616, and first authentic transfusion, in a human, was performed by Denys in 1667. Hemoglobinuria was noted following this transfusion. Due to a death, soon after this, transfusion was outlawed in France. However, it was revived by Blundell, an obstetrician, in 1818. Landsteiner, in 1901, started the work on blood grouping which resulted in the present systems. The next great need was some way to give the blood before clotting occurred. Crile's cannula supplied this, and in 1915 Lewisohn controlled coagulation. Now blood transfusion was firmly established, and indications for the procedure increased paralleling the increase in safety. The indications are hemorrhage, shock, certain blood dyscrasias, hemorrhagic diseases, certain marked anemias, and miscellaneous conditions.

The Jansky system of blood grouping was established first. The International system is the most scientific, but the Moss system is most popular in the United States. The donor should be a robust male between 18 and 35, with a normal heart and blood pressure, a negative history of syphilis and recent malaria, and a negative Wassermann. It is better if he has not had food recently. If he is apprehensive, his fears should be allayed as much as possible. If the donor's veins are small, the needle should be directed towards the hand. An adjustable tourniquet, and the opening and closing of the hand helps to insure a regular blood supply.

The recipient is usually easier to control after a narcotic, and there should be a novocain skin anesthesia with both. When inserting the needle a small amount of vaseline will help prevent the disconcerting skin drag almost as much as nicking the skin. And the recipient, usually being a woman, and usually having more difficult veins, should have the needle inserted first, unless there be danger to the donor from a blood stream infection.

The first danger of blood transfusion is due to blood incompatibility, and a severe reaction from blood incompatibility can often be foretold by the recipient's warning while on the table. Sudden, severe headache, urticaria, chill, rise in temperature, severe praecordial pain and dyspnoea, pain in the lumbar region, an irregular pulse, or marked fall in blood pressure should cause the transfusion to be stopped, and adrenalin given. The transfusion should not be resumed from that donor. Especially is this important if attempting to use the same donor twice, or if the patient has had several transfusions. Broken down blood is probably the toxic agent which accounts for the severe reaction. The pathological findings, as described by Bordley, of tubular nephritis, liver damage, and icterus are very similar to those of black water fever. In fifteen cases, reported by him, the amount of blood given was stated. In the five who recovered 314 c.c. was the average amount given, and in the ten who died 564 c.c. was the average amount. Hemoglobin in the urine, and diminution in the amount of urine was recorded in most of Bordley's cases. It is doubtful if less than 50 c.c. of blood kills unless due to an anaphylactic reaction. I have transfused small amounts of human, dog, duck, and chicken blood into rabbits with only one death. This death was due to the repetition of 4 c.c. of human blood after one month. The second great danger of blood transfusion is speed. If there is an error in the cross-matching on the indirect side, the serum of the donor will clump the recipient's cells. This can be prevented by giving the blood slowly, so that the donor's serum will be diluted. Dilution prevents the agglutinins and hemolysins from acting. Speed can be increased where there has been loss of blood volume, and can be faster in the young, with normal heart and vessels, than in the old. The danger of displacing a hemostatic clot by transfusion is probably less than is supposed. Movement of the patient, however, may displace the clot and such a transfusion should be done in bed. A

Read before the South Carolina Medical Association, Greenville, S. C., April 22, 1936.

3-5 c.c. transfusion per pound weight at 50 c.c. per minutes usually changes the blood pressure less than 10 m.m. Hg. The third danger is an acute dilatation of the heart, but this is probably a rare occurrence. I find that a 3-5 pound rabbit can stand the rapid injection of 100 c.c. of saline, which gives them from 20 to 33 1-3 c.c. of fluid per pound weight. The fourth danger is embolism. Small clots are usually seen in cleaning the apparatus after transfusion. Particularly are the clots noticeable on valves. But either due to their softness or adherence to the apparatus, this remains a theoretical rather than a practical danger. Danger from air embolism is eliminated by present day technique. The fifth danger is the transference of disease. The diseases most likely to be transferred are syphilis and malaria.

The operator should use the method which gives him the best results, and the one with which he is most dextrous, as the percentage of reactions is usually much higher where difficulty is encountered in the transference of blood. Lewisohn was able to reduce reactions from 23 to 13 per cent by permitting only eight senior members of the house staff to do transfusions. The mechanical methods are gaining ground on the more standardized citrate method. The citrate method is utilized for intra-peritoneal, auto-transfusions, and the use of blood from cadavers. This method has changed very little since its introduction. Immunotransfusions are given by any method. Minot's and Dodd's recent work on guanidine, calcium and sodium citrate made me wish to become more familiar with the calcium and citrate balance. Dr. Lipscomb, of the University of S. C., tells me that, chemically speaking, it takes ten grams of sodium citrate to combine with 2.1 grams of calcium. 19.214 grains of sodium citrate are used in a 500 c.c. transfusion. 1 c.c. of 20 per cent solution of sodium citrate, or 3.068 grains will regularly throw a rabbit into convulsions, and left alone this rabbit will regularly die. If one is able to hit the ear vein of the rabbit while in convulsions (I was able to do this three times), calcium will instantly stop the convulsions. The rabbit will stand this amount of sodium citrate if given in blood or more dilute solution. Twice this amount intra-peritoneally did not cause convulsions, and if calcium was given before the citrate, convulsions were not produced. It seems from this, as previously found, that the rapid introduction is much more dangerous than the slow introduction of sodium citrate into the blood stream. This is probably one of the reasons for the accepted rate of citrate transfusions being 15 c.c. per minute. This method has controlled speed, which is one necessity for an ideal transfusion.

The multiple syringe method is well adapted to hospital use, and is used by two of the large hospitals in this state. This method requires excellent team work, as it takes practice for the two workers to be ready at the same instant—one with his syringe emptied and the other with his syringe full. It wastes some blood, and the needles are sometimes displaced while connecting and disconnecting the syringes. The Memorial Hospital in Richmond uses this method where there may be danger to the donor from blood stream infection, and the syringes are discarded each time.

MECHANICAL METHODS

The Jube, a grooved, plunger type of apparatus, is popular in Greenville, while the Moore, a valve set, is preferred in Columbia. The Unger and the Scannell sets permit washing with saline while connected. Numerous other sets are on the market, and new ones are being introduced frequently. These mechanical sets have rubber connections. These tubes should be short, as they cannot be coated with paraffin satisfactorily. But short tubes markedly increase the difficulty in doing the hardest of transfusions—that of giving blood to a delirious patient.

Immediately after the transfusion the set should be cleaned, for unless the blood is removed it is decomposed, and may be a foreign element in the next transfusion. After the best of washings, hydrogen peroxide will frequently displace visible clots.

RESULTS

1. Spectacular results can be obtained in hemorrhage and shock. I have transfused with the most satisfying results bleeding peptic ulcer, ruptured ectopic pregnancy, incomplete abortion, ruptured spleen and kidney, trauma with

loss of blood, and post-operative shock.

II. Transfusion lowers the operative mortality in patients with a hemoglobin of 50 per cent or lower.

III. It is a valuable adjunct in anemia.

IV. It is of temporary help in the control of hemorrhagic diseases.

V. Certain blood dyscrasias show some improvement from blood transfusions, but I have seen an increased number of transfusions cause an increased percentage of reactions.

VI. The results have been somewhat disappointing in the treatment of infections.

VII. Miscellaneous conditions:

A. Improvement occurs in chronic ulcerative colitis with bleeding.

B. I have seen remission in three cases of pellagra.

VIII. Reactions as reported by Regena Beck occurring in 11.14 per cent in unmodified blood transfusions, and 29.29 per cent in the citrate transfusion.

IX. An increase in red cells of approximately half million and an increase in hemoglobin of 11 per cent may be expected.

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DISCUSSION

Dr. George H. Bunch, Columbia:

Dr. Adcock has ably presented the indications, the contra-indications, and the technic of blood transfusion. His paper has been educational.

I shall discuss blood transfusion from the standpoint of the surgeon. To me it is the greatest contribution of this generation to surgery. Modern surgery has been made possible by three great scientific discoveries or achievements—first, asepsis, by Lord Lister; second, anesthesia, by Dr. Crawford W. Long, of Athens, Georgia, which is only one hundred fifty miles from here; third, blood transfusion, which has so recently been perfected. The safety and the facility by which one person's blood may be made to flow and to function in the circulation of another has greatly enhanced the field of surgery. By it inoperable risks have been made safely operable; by it poor risks have been made good risks for surgery. Heretofore we required a minimum of thirty per cent hemoglobin before undertaking major surgery. Now we transfuse these anemic patients so that we have fifty per cent hemoglobin before undertaking major surgery. In my opinion, a patient with fifty-per-cent hemoglobin is one-hundred-per-cent better risk than a patient with thirty per cent hemoglobin.

Operative deaths are usually due to hemorrhage, shock, and infection. Blood transfusion is the only specific for acute blood loss. To see, after transfusion, the returning color and animation that follow almost in the twinkling of an eye in a patient dying of acute hemorrhage is to me a miracle as real and as wonderful as any described in the Bible. Surgical shock has been ascribed by Frazier to the loss of blood volume. Whether this be from hemorrhage or not, there is no more certain way of relieving it than by blood transfusion. The ultimate outcome of infection following operation is dependent upon two conditions: One, the resistance of the patient, and, two, the virulence of the infecting organism. The resistance of the patient, if he be anemic, can certainly be considerably improved by blood transfusion. Safety demands that, when a major operation is to be undertaken in which dangerous hemorrhage may result or is to be expected, a suitable donor be typed and ready for transfusion, if it be necessary. There

is a moral and medicolegal obligation in giving blood from a donor who has not been proved to have a negative Wassermann reaction.

Giving blood to a patient often does more than relieve blood loss and restore blood volume. It sometimes restores the power to clot, which has been lost in the blood that remains in the patient. This is notably seen in chronic bleeding ulcer, duodenal or gastric. After repeated small transfusions the clotting power is restored and the bleeding stops; whereas a single large transfusion, by increasing the blood pressure, may cause increased hemorrhage.

In conclusion, I wish to say that the surgeon who does not protect his patient before operation, if it be indicated, or who does not restore his patient after operation by blood transfusion, if it be indicated, is negligent.

Dr. Thomas Messina, St. Francis Hospital, Greenville:

I wish to emphasize just one fact. We always cross-match and match these patients before transfusion. I want to emphasize this: Before you transfuse a patient a second time, always have that patient matched and cross-matched with any donor that you see fit. I have had cases recently at the hospital where I happen to be house surgeon who have had a transfusion four or five times. I got four or five donors the first time and used the same donors to transfuse the second time and got a very bad reaction. I came to the conclusion that each patient should be matched and cross-matched before he is transfused a second time.

RIDGE MEDICAL SOCIETY MEETING

The Ridge Medical Society met August 17, 1936, at 7:20 o'clock P. M. with a larger attendance than usual.

Dr. R. H. Timmerman reported a case of absence of penis in a middle aged man. Dr. W. W. King in discussing it thought it was probably due to granuloma inguinale and narrated some of his observances.

Dr. M. M. Mostellar of Columbia made an instructive address on Cholecystography and various methods of diagnosis which included the dyes, barium, X-Ray, etc. He exhibited a number of films showing the gall bladder in various conditions. He also made a number of X-ray pictures of bones with a small portable machine. A number of those present used a fluoroscope to observe bones, etc.

Dr. R. W. Ball of the State Board of Health made a short talk on pre-natal clinics and asked for the cooperation of the doctors in regard to them.

Dr. G. E. McDaniel of the State Board of Health made an address on syphilis and its ravages and gave valuable statistics relating thereto and asked for cooperation in outlining a suitable, practical method of controlling and eradicating it.

A committee of three was appointed to cooperate with the State Board of Health.

Dr. W. W. King presented the matter of establishing a new hospital at Summerland College. The society endorsed the establishment of the hospital and appointed Drs. King and Garvin to secure contributions from the doctors of our society for it.

Dr. and Mrs. Garvin invited the society and auxiliary to have their next meeting with them in Ridge Spring. Their invitation was joyously accepted.

Dr. M. B. Woodward after being away rejoined our society.

The Ladies Auxiliary met with Mrs. A. L. Ballinger and had a large attendance.

Notwithstanding the hot weather we had interesting meetings.

Supper was served in The Rutland Hotel where good fellowship reigned .

W. P. Timmerman, M.D., Sec'y.

YORK COUNTY MEDICAL SOCIETY MEETING, YORK, S. C., SEPTEMBER 24, 1936

Dr. Robert Ball of Charleston, head of the maternal and child health division of the state board of public health, was the principal speaker at a meeting of the York County Medical society held in the office of Dr. John I. Barron, York physician. "Maternal Preventive Medicine" was the subject of Doctor Ball's talk, which was followed by a general discussion of this topic.

At this meeting the physicians discussed some changes that they thought would be advisable in the workmen's compensation law. Doctors from all parts of York county were in attendance.

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OCTOBER, 1936

THE SOUTH CAROLINA MEDICAL ASSOCIATION MEETS IN COLUMBIA 1937

President R. C. Bruce of Greenville and the other officers of the Association including the Council have given much thought already to the next meeting of the Association. The date has been fixed as usual for the third week in April, but this time the date will fall on April 13, 14, 15. The Columbia Medical Society will be the host, and that means an unusually successful meeting of the State Association. The Capital city has many advantages as a place of meeting for any State organization, since it is centrally located and has good facilities otherwise. The President has been most fortunate in his selection of guest speakers. Further details of the scope of the meeting will be published from time to time, but it is not too early for those who intend to read papers to begin to think about their part in making the convention a success. In due time the Scientific Committee will authorize invitations to be extended essayists for a place on the program. At one of our Columbia meetings there was an attendance of around seven hundred. Why not increase this wonderful record?

THE CONFERENCE OF STATE SECRETARIES AND EDITORS OF STATE JOURNALS

In many respects one of the most important organizations in this country is that of the State Secretaries and Editors held each year in Chicago under the auspices of the American Medical Association. This organization is a real clearing house for up to date information on every phase of medical activities. The date has been fixed this year for November 16, 17. It is gratifying to know that the meeting will be held in the remodeled headquarters home of the A. M. A. and in an auditorium designed to accommodate this and other important organizations in the same building. The headquarters has been modernized in every respect at a cost of about half a million dollars and will be an increasing asset to organized medicine in this country. At these meetings the Secretaries and Editors have the benefit of personal contacts not only with the officers of the A. M. A. but the Board of Trustees and the Presidents of many State Societies. Such contacts provide sources of information available nowhere else. The programs always include discussions of the most pressing problems before the profession; and when the Secretaries and Editors return to their homes, they have a composite picture of what is going on not only in the headquarters building but in every state in the Union.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 313 (31109)

March 13, 1936

Case of Drs. Martin, Prioleau, and McCrady

Student Nelson (reading):

A negro woman, domestic servant, age 24-29 years, admitted 1-28-36, died 2-5-36.

History: Dysmenorrhoea for 4-7 years. For past 3 months "this pain" has been almost continuous and cutting in nature. Menstrual periods originally lasted 4 days, now last 3, still are regular. Denied abnormal uterine bleeding and leukorrhoea. Had a 4 plus Wassermann in clinic, for which she was treated with neoarsphenamine. One living healthy child, normal labor and puerperium. No other pregnancies. Had diarrhoea (which lasted about 30 days) a few months before admission, and this was followed by constipation which has persisted. Pain on defecation, occasionally passed blood while straining at stool. Has had a "pimple" on left buttock since June (1935).

Exam.: Fairly well nourished negress, apparently not in pain. Temp. 99.8, pulse 88, resp. 24, BP 135/80. Mucous membranes anemic. Pupils react well in accommodation, poorly to light. Several carious teenth. No lymph glands palpable. Chest clear. Heart not enlarged, no murmurs heard, heart action normal. Abdomen: "Is slightly rigid on examination. Several irregular, small nodular masses palpated in upper left quadrant, supposedly fecal impaction. Slight tenderness in lower left quadrant. Liver and spleen not palpable." Rectum: "Annular constriction about 2 1-2 inches from anus that would not admit tip of finger." Draining fistula on left buttock. Vaginal exam. (Dr. McCrady): "The uterus is fixed at the base. The cervix is small. The vaginal fornices are so indurated that the uterine appendages cannot be felt. Partly encircling the rectum in the vaginal fornices can be felt a hard thickening. On rectal exam. the lumen is constricted but the lining smooth."

Lab.: Urine (2 exams.) completely negative. Blood (1-29): Hb. 70 per cent; RBC 4, 560,000; WBC 9,600; lymphs 28 per cent, monos 7 per cent, polys 62 per cent. Blood Kolmer and Kline negative.

Course: Temp. varied about normal for first 6 days, then rose to 101.4 on 2-3; fell to normal the following night, then progressively rose to reach 106 on the day of death. Pulse generally higher on chart than temp., imperceptible for last day. Resp. normal until 2-4, after which they were 32-44 per minute. Abdomen became markedly distended. On 2.2 an enema was given without difficulty and a small amount of flatus and some blood clots were returned. Distension not materially relieved by enemata, pitressin, turpentine stupes or Levine tube. Operation (2-4): "The intestines are markedly distended particularly the colon. The rectum is constricted behind the lower portion of the uterus—." "—dense tissue at the base of the broad ligaments." Colostomy done (sigmoid); spinal anesthesia used. Immediate post-operative condition fairly good, but during the night the pulse became weak, and the skin cold. Stimulants failed to revive her and she died at 6:10 PM on 2-5-36.

Dr. Prioleau (conducting): Mr. Quantz, will you open the discussion?

Student Quantz: From the history of dysmenorrhoea, the pelvic examination and the operative findings, it is evident that this patient had a "frozen pelvis," from induration and fixation of the broad ligaments. This fixation of the pelvic organs could come about either from disease of the rectum or of the pelvic organs.

Gonorrhoeal infection of the fallopian tubes frequently gives a "frozen pelvis," but the fixation is seldom so extreme as it seems to have been in this case; too, I would have expected a history of leukorrhoea if tubal infection had caused it.

Endometriosis is a second thing to consider.

If the history had been gotten in a little more detail, especially as to the exact time of occurrence of the pain in the menstrual cycle, we might be able to make or exclude that diagnosis definitely. A densely fixed fibrosis of the pelvis, usually with retroversion of the uterus, would be the thing to expect on examination of a patient with pelvic endometriosis.

Tuberculosis of the pelvis is another thing to consider.

Dr. Prioleau: What do you mean by "tuberculosis of the pelvis?"

Student Quantz: I mean to say a tuberculosis of the pelvic peritoneum, probably as a result of tuberculosis of the tubes. But if such had been the case, it would seem that fluid and tubercles would have been noted at the time of operation. The presence of an anal fistula raises some suspicion of tuberculosis, too.

Carcinoma of the rectum is another thing to consider. The history of pain on defecation, bleeding at stool and constipation are all very suspicious, even in a patient as young as this one seems to have been. From the history it cannot be learned whether rectal symptoms have been present for a short time only, or whether they have been present from the first.

An ordinary syphilitic stricture of the rectum might also cause almost all of these symptoms.

I do not see how any of these possible diagnoses can be ruled out or definitely established in this case. Chronic intestinal obstruction from some type of stricture of the rectum was the important feature of the case.

Dr. Prioleau: Mr. Marshall, will you continue?

Student Marshall: Mr. Quantz has pretty well covered the field, but I believe that syphilitic stricture of the rectum deserves more emphasis. This patient had a positive Wassermann at one time, and received anti-syphilitic treatment, but I rather doubt that it was adequate. Simple inflammatory stricture of this order could cause all the symptoms relative to the rectum. To explain the frozen pelvis, some other condition would have to be assumed, and I believe that a chronic salpingitis is the most likely explanation for a fixation of the pelvic structures, especially in the negro. I believe that her rectal condition was a separate affair.

Dr. Prioleau: I examined this case several times in the clinic. The rectum was constricted at a much higher level than most inflammatory strictures occur. And the stricture was not as dense and unyielding as most inflammatory strictures are: the examining finger could be projected into the stricture, and the mucosa felt smooth but nodular.

Student Marshall: A gumma of the ischiorectal space is frequently followed by stricture formation and fistula, but would usually be at a lower level than it now seems that the constriction in this case was found.

Endometriosis would fit in with the occurrence of a stricture at this high level. It would help us in making this diagnosis if we knew that the pains came on a day or so after menstruation began, and continued for several days after menstruation ceased.

Dr. Prioleau: Can you explain the rectal findings on the basis of tuberculosis? Can the operative findings be correlated with that diagnosis?

Student Marshall: If tuberculosis of the peritoneum had been present, it probably would have been noted at operation. The rectal findings are not very suggestive of tuberculosis. An x-ray of the chest would have helped to exclude tuberculosis of the rectum, as it is usually associated with an active pulmonary lesion when it occurs.

Dr. Prioleau: Mr. Harrison, what do you think of this case?

Student Harrison: I think endometriosis can explain the whole picture. We have a history of dysmenorrhoea, with progressive increase in the pain until it became constant. The rectal stricture could occur as a result of continued menstruation of aberrant endometrial tissue in the cul-de-sac and in the rectal wall, with fibrosis occurring. The woman was in the child-bearing period of life, at which time endometriosis occurs. The pain on defecation, constipation and bleeding at stool go with the rectal stricture, which is frequently associated with ulceration of the bowel. The only thing missing from the characteristic picture of endometriosis is the rather characteristic bluish cysts which are usually noted in the vaginal vault. There is no notation in the record as to their presence or absence. The operative findings—dense fibrosis in the broad ligaments and other

pelvic structures—can be explained on a basis of endometriosis.

Syphilis of the rectum could also explain the clinical picture, but it seems to be less likely because of the negative Kolmer and Kline on this admission. Too, syphilis seldom causes a frozen pelvis, and the rectal stricture associated with syphilis is usually at a low level.

Dr. Prioleau: Mr. Cantey?

Student Cantey: I think the whole picture is best explained on a basis of endometriosis. Endometriosis can cause stricture of the rectum. Ulceration is apt to occur above the stricture as a result of fecal stasis, and by this method infection from the intestinal tract could enter the ischio-rectal space, cause suppuration and be followed by fistula formation.

Dr. Prioleau: With an anoscope I could see the lower end of the mass; there was no apparent ulceration at this level.

Mr. Baker, what is your idea as to the cause of death?

Student Baker: I believe that she died of a pneumonia which developed after operation. But that's probably wrong, on second thought as she had spinal anesthesia.

Dr. Prioleau: Pneumonia is probably just as common, or more so, after spinal anesthesia as after an inhalation anesthesia.

Mr. Pernworth, what do you think was the immediate cause of death?

Student Pernwerth: She died about 26 hours after her exploratory laporotomy. I believe that she died from shock, failing to react from the operation and from the depressing effects of spinal anesthesia.

Dr. McCrady: The only way endometriosis can be accurately diagnosed preoperatively is on a basis of the vaginal findings, and the situation reminded me very much of endometriosis, so much so that that was my diagnosis. There was a marked induration of the fornices, and the thickening of the rect-vaginal septum was very striking.

I felt that this mass was extrinsic to the bowel, and ruled out carcinoma of the bowel on that basis.

Inflammatory venereal diseases, especially lymphogranuloma, can also give such a rectal and vaginal condition.

A number of you have mentioned that fistula in ano suggests tuberculosis. More recent work indicates that rectal fistula are usually not of tuberculous origin. I imagine that the autopsy findings will surprise us.

Dr. Lynch: At the time of autopsy, we were not certain what the rectal condition was. As you can see here (demonstrating autopsy specimen), there is dense fibrous tissue about the rectum, markedly constricting the lumen. Accumulations of mucoid material are noted within this fibrous tissue. At the time of autopsy this was thought to be muco-pus. Grossly we thought that it was probably an inflammatory stricture, with a carcinoma of the rectum being the second-best choice. There was an ulcer overlying this constriction, and the fistulous tract lead up into the region of this ulceration, although it apparently did not communicate with the lumen of the bowel at the time of autopsy. There was no evidence of chocolate cysts in the pelvis or rectal tissue, to make endometriosis likely.

After the histological examination, the diagnosis of mucoid carcinoma of the rectum was quite clear. And from the data at hand, I believe that carcinoma of the rectum was the most likely bet. The findings were those of an annular constriction of the rectum at a higher level than an inflammatory stricture is apt to occur. I do not believe that endometriosis would cause a constriction of an annular nature; to do so the endometrial tissue would have to be in the retro-peritoneal tissue behind the rectum, and that would be most unusual; endometriosis would probably cause an induration of only the anterior portion of the rectal wall. Fistula should not have caused us to discard the diagnosis of carcinoma, since fistula can occur just as Mr. Cantey has said, in any constricting lesion of the rectum.

There was dense infiltration of the recto-vaginal septum, of the cul-de-sac and of the post-rectal tissue. The mass was so firmly bound to the sacrum that it could not be dissected away, and had to be cut away with the knife. Endometriosis and tubal infection could hardly cause this dense a fibrosis.

Possibly this patient's age caused you not to consider the diagnosis of carcinoma too seriously. The age should not influence you in this manner, because malignant tumors can oc-

cur at any age, and should always be considered in any obstructive lesion of the rectum. On the other hand, she was probably older than the age she gave; her ovaries appeared to be in the late child-bearing age when studied histologically.

As to the cause of death, the loop of bowel forming the colostomy was acutely inflamed and showed marked necrosis of its mucosa: an acute necrotic colitis, superimposed on a long-standing chronic infection from obstruction. The colitis was not a result of colostomy but was doubtless there before the operation. She apparently died from shock.

Dr. Prioleau: Carcinoma of the rectum usually gives a firm but elastic constriction of the rectum as was the case here, rather than the dense, low-placed constriction as seen in various inflammatory conditions.

Colostomy in this case was delayed too long, as is usually the case. It should not be delayed until the patient is moribund.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"TRANSVERSE ABDOMINAL INCISIONS"

The transverse abdominal incision has its strong advocates, and it is constantly being brought up for consideration. Recently two very good articles upon it have appeared—(Robert L. Sanders, Annals of Surgery 104:74 (July, '36) and F. S. Lynn and H. C. Hull, Annals of Surgery 104:233 August, '36). In them has been made the necessary comparison with the vertical type of incision.

The main objections to the vertical type of incision are concerned with its division of the posterior sheath across its line of pull. The posterior sheath is formed by fusion of the posterior lamella of the aponeurosis of the internal oblique with that of the transversus abdominis, both of which muscles have a pull essentially transverse. This is increased by their respiratory function and attachment to the chest wall. After division there is retraction which makes closure difficult; the sutures, being placed in line with the aponeurotic fibers, tend to tear out. To this factor is attributed evisceration, adhesions and hernia formation. This applies particularly to the upper abdomen. Interference with the function of the flat abdominal muscles causes splinting of the lower thorax which predisposes to pulmonary complications. Vertical incisions within the borders of the recti do not cut across muscle fibers. Those in the midline do not sever nerves. However those on either side of any length divide nerves resulting in muscle atrophy. The greatest advantages of the vertical incision are its ease of execution, and of extension upwards or downwards, giving access to practically the whole abdominal cavity. The latter feature is of particular value where there is some uncertainty of diagnosis and the exact exposure required.

As can be judged from the foregoing, the essential feature of the transverse incision is the division of the posterior sheath in line with its fibers. The difficulty is the approach. The methods differ in the treatment of the anterior rectus sheath and the recti muscles. The simplest passes transversely through the thickness of the abdominal wall at the desired level; should it be extended lateral to the rectus, an attempt is made to separate the fibers of the flat muscles. This is simple and quick of execution and closure. The ends of the recti muscles are prevented from retracting by their attachment to the anterior sheath and the linea transversae. The ends of the muscle heal quickly and firmly (Lynn and Hull).

In the method advocated by Sanders the anterior rectus sheath is divided transversely and then separated from the underlying muscle upwards and downwards. The recti are then easily retracted, permitting transverse division of the posterior sheath. The difficult part of this operation is separating the anterior sheath

without tearing the muscle. Its lateral extension is limited, though according to the author, exposure is adequate without this. It circumvents transverse division of the recti muscles by separating them from their sheath, however opening considerable tissue space, a potential danger as regards infection.

While transverse incisions differ in some respects, they have certain things in common. They conform to anatomic and physiologic requirements by following the course of the abdominal wall structures, especially as regards the flat muscles and the nerves. There is a lack of strain on the suture line which promotes healing and minimizes the danger of evisceration and hernia. The peritoneal closure is more likely to remain intact. They reduce post-operative pain, especially in the presence of cough and nausea. They interfere less with respiratory movements of the lower thorax. If properly drained, their healing is not jeopardized in infested cases.

Probably the greatest disadvantage of the transverse incision is its limited exposure as regards the level in the abdominal cavity. Accordingly it is advocated chiefly where the diagnosis and intended operative procedure are definite and the incision can be made at the level indicated.

WOMAN'S AUXILIARY

SOUTH CAROLINA MEDICAL ASSOCIATION

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Dear Auxiliary Members:

Now that vacation-time is over, I am looking forward to a keener interest in Auxiliary work. Since the convention in April, I have written around eighty letters to Auxiliary members and to southern and national officers. In some instances answers were prompt, for which I am grateful. Others have not replied at all. In this work, each member is responsible for the growth and progress of the Auxiliary. Therefore, I urge you to answer any communications you may receive from your officers so that they may better serve you.

The names of the State officers have been placed in the hands of the presidents of each Auxiliary. Please contact them for any information or help they may be able to give you.

It is urgent that we strengthen present Auxiliaries as well as organize new ones, and in this we need and plead for the cooperation and encouragement of each member. We shall welcome any suggestions from you concerning either.

On July 6th, Mrs. J. L. Bundy and I had the pleasure of attending the Greenville Auxiliary in its mid-summer meeting. Mrs. T. R. W. Wilson, president of the Greenville Auxiliary, entertained us at a beautiful luncheon in the Poinsett Hotel. Members of the board of the Greenville Unit attended the luncheon also, and the fellowship and friendly spirit that prevailed there, as well as the very informative and interesting program in the afternoon, were a source of great inspiration to me.

I was given the privivlege and pleasure of announcing a trophy donated by Mrs. Wilson, first vice president, to be awarded to the county publicity chairman who compiles the best pub-

licity scrap book during the year. Rules governing the trophy are: "Best publicity, neatness, and largest number of articles written." The judges will be Mrs. Jenkins Mikell, State Publicity Chairman and one other whom I shall appoint.

There will be a similar trophy awarded for the best historical paper written during the year. I hope each Auxiliary will compete. In planning for the year's work, and for these trophies, let us not forget the Student Loan Fund, the real purpose of our Auxiliary. We must not fall short of last year's wonderful record.

May we remember too, that the real object of our organization is to assist our husbands to promote good health, and to encourage fellowship and friendliness among doctor's families.

Again, I want to pledge my loyalty and personal service to each of you.

Most sincerely yours,

(Mrs. W. Frank) Rena Blanton Strait,

President, Woman's Auxiliary to

South Carolina Medical Association.

BOARD MEETS

The post board meeting of the Executive Board of the Auxiliary to the S. C. Medical Association met in the parlor of Greenville Woman's College immediately after lunch.

Mrs. Frank Strait, the newly elected president presided. The following members of the Executive Board were present: Mrs. Frank Strait, Mrs. L. O. Mauldin, Mrs. Thos. A. Pitts, Mrs. T. R. W. Wilson, Mrs. W. R. Blackmon, Mrs. Jesse Wilson, Mrs. Buck Pressley, Mrs. C. E. Owens, Mrs. Chas. P. Corn, and Mrs. W. C. Abel.

In order that the by-laws be changed to allow an increase of ten cents per member in state dues, a Constitutional Committee was appointed as follows: Mrs. T. R. W. Wilson, Mrs. Thos. A. Pitts, and Mrs. W. C. Abel.

Mrs. Thos. A. Pitts made the motion, seconded by Mrs. C. E. Owens, that the president-elect assist the first vice-president in the work of organization. The motion was carried.

The treasurer, Mrs. Thos. A. Pitts, requested an auditor for the treasurer's books. That Dr. A. F. Burnside of Columbia be appointed, met with the approval of the Board.

The President introduced two new councillors, Mrs. W. R. Blackmon of Rock Hill, and Mrs. Buck Pressley of Due West.

Mrs. T. R. W. Wilson suggested that each Auxiliary raise the extra ten cents per member in any way it wishes.

Mrs. Thos. A. Pitts suggested that the secretary write each Auxiliary and ask for a donation of ten cents per member. It was so ordered. Mrs. Pitts also made the motion that $25.00 be set aside for the use of the President. It was carried.

As there was no other business the meeting adjourned.

Mrs. W. C. Able, Sec. Pro-tem.

THE RIDGE MEDICAL AUXILIARY

The Ridge Medical Auxiliary is a wide awake organization. The members are active and take quite an interest in the plans and attend the meetings well. Interesting year books for the year '36-'37 were arranged by Mrs. W. P. Timmerman and Mrs. F. G. Asbill. In addition to the music, business and social feature the following subjects have been selected for study:

"The Teeth"—Mrs. E. C. Ridgell.

"Eyes—Miss Louise Ballenger.

"The Indian Medicine Man—His Contribution to the Medical Profession"—Mrs. F. G. Asbill.

"The Divine Physician, His Remedies and Cures"—Mrs. W. P. Timmerman.

"Women Physicians"—The Misses Waters.

At the June meeting Mrs. Ridgell read the paper on Teeth. At this meeting the Auxiliary decided to arrange a Medicinal plant scrap book. In addition to some local visitors Mrs. Webb of Wagener was present.

At the August meeting Miss Louise Ballenger read a paper on Eyes. Mrs. Timmerman exhibited a stalk of Poke and gave a talk on the Poke plant. She told about Dr. Norwood of Cokesbury who discovered the medical qualities of Veratrum Viride made from the Poke root. At this well attended meeting the following visitors were welcomed; Mrs. Malcolm Mostellar, Mrs. A. H. Johnson of Columbia, Mrs. Carroll Brown, Jr., of Walterboro and Mrs. R. M. Street of Edgefield.

NEWS ITEMS

Dr. O. D. Garvin of Ridgespring, S. C. has been appointed public health director for the district comprising the counties of McCormick, Edgefield and Saluda, subject to confirmation of the Executive Committee of the State Board of Health. Doctor Garvin, who succeeds Dr. Goodman Bare recently transferred to Anderson County, is an alumnus of the University of South Carolina, South Carolina Medical College and served as interne at the Columbia Hospital.

Dr. S. A. Ezell, 64, practicing physician of Lancaster, S. C. died in a Rock Hill hospital Wednesday, September 23, after a brief illness. He is survived by his widow; one daughter, Mrs. Richland Sowell, two sons, Fred and Mack Ezell; a sister and four brothers. Dr. Ezell was a member of the Lancaster County Medical Society and the South Carolina Medical Association.

On September 11 under the direction of Dr. Lee Milford, Resident Surgeon at Clemson College, about six hundred freshmen were given the benefit of a thorough physical examination by physicians and dentists. Among the physicians participating were Drs. John Martin, L. J. Bristow, H. M. Daniel, G. S. Clinkscales, T. R. Gaines of Anderson; Dr. J. L. Sanders of Greenville; Dr. J. N. Webb and Dr. E. A. Hines of Seneca.

Dr. J. I. Waring, Assistant Editor of the Journal of the South Carolina Medical Association, visited the Headquarters offices of the Association and Journal, Thursday, September 10. He addressed the Rotary Club and on the afternoon of the same day delivered a lecture on Infant Feeding at the Piedmont Post Graduate Clinical Assembly, Anderson, S. C.

Dr. R. M. Pollitzer of Greenville, Associate Editor of the Journal, Department of Pediatrics, visited the Headjuarters offices of the Association and Journal recently in connection with his duties as a member of the Staff of Specialists holding maternity and child welfare clinics in Oconee County.

Dr. D. S. Asbill, of Columbia, has been in New York where he took a course at the American Academy of Ophthalmology and Otolaryngology.

Dr. G. S. T. Peeples, formerly Georgetown County Health officer, left September 26 for Harvard to take a nine months course leading to a certificate in public health.

Dr. Leo Hall was honored on his birthday Thursday evening, September 24, with a surprise party given at their home. About 30 guests called and spent an enjoyable evening dancing, after which refreshments were served by Mrs. Rembert Smith, Mrs. H. F. Stevenson and Mrs. Hall. Doctor Hall is Assistant Supt. of the South Carolina Sanatorium.

Dr. Malcom Mosteller of Columbia has gone to Johns Hopkins Hospital for a course of study.

A pediatrician and public health worker, Dr. Hilla Sheriff of Spartanburg, has been awarded a scholarship at Harvard University.

Many friends over the state will be enterested to hear of the marriage of Miss Clara Ravenel, daughter of Mrs. A. G. Barnwell Bennett, to Dr. D. Lesesne Smith, Jr. of Spartanburg. The wedding took place in St. Timothy's Episcopal church, Spartanburg, S. C., October 2, 1936.

The Sanatorium Committee of the State Board of Health will meet soon to determine what improvements in the line of buildings will be made at the South Carolina Tuberculosis Sanatorium with $250,000 made available through a bond issued authorized by the Legislature at its last session.

The Committee will meet with the architect, J. B. Urquhart, who made preliminary plans for the completion of the sanatorium building project, which originally was to have been financed with combined state and federal funds. The application for a grant for funds to match the state funds is still before the public works

administration, and health officials are still hopeful that it will be approved and make possible the carrying out of the complete project. Otherwise it was explained, the state funds will be used to such other buildings at the hospital as is possible under the limitation. Already one buliding is being constructed with a $65,000 allotment made by the federal government. It is now in the plastering stage.

The Committee is composed of Dr. George Dick of Sumter, Dr. William R. Wallace of Chester and Dr. D. Lesesne Smith, Sr., of Spartanburg.

On Monday morning, August 24, ground was broken for the new Oconee County Hospital. The site was donated by Dr. W. R. Doyle and includes six acres located in the fork of the roads leading to Walhalla and Westminster about a mile from the city limits of Seneca. With shovels and picks in hand the following men were present and participated in the brief official ceremony: J. L. Lowery, Mayor of the Town of Seneca; Dr. E. A. Hines, Secretary Oconee County Medical Society; Mr. J. C. Duncan, Supervising Engineer for Oconee County; Mr. B. H. Gambrell, Assistant Supervising Engineer; Mr. B. B. Lawrence; Mr. Frank Hunt; Mr. T. B. Jones; Mr. Carl Blackwell; and Mr. Sloan Davis, Foreman of the WPA force and about fifty men.

This hospital is a WPA project and when completed will cost about fifty or sixty thousand dollars.

The Council of the South Carolina Medical Association met in Columbia, August 27, with the following members present; Dr. R. C. Bruce, President; Dr. J. R. DesPortes, Chairman; Dr. J. H. Cannon; Dr. T. A. Pitts; Dr. W. L. Pressly; Dr. Hugh Smith and Dr. E. A. Hines, Secretary. This was a joint meeting with a special committee from the South Carolina Hospital Association to consider some plan of hospital care for South Carolina. Special committees from both bodies were appointed to study the matter and report at a later date. Representing the Council will be Dr. T. A. Pitts of Columbia; Dr. J. H. Cannon of Charleston and Dr. E. A. Hines of Seneca.

LETTER FROM SOUTH CAROLINA INDUSTRIAL COMMISSION

August 26, 1936

Dr. Roger G. Doughty,
Chairman Workmen's Compensation Committee,
Columbia, S. C.

Dear Dr. Doughty:

After discussing with you and your Committee the practicability of changing our present method of handling for approval medical bills of one hundred dollars ($100.00) or less, this is to advise that the Commission has decided that effective September 1st, 1936, we will put into operation the plan whereby all medical bills of one hundred dollars ($100.00) or less shall stand approved unless protested by an interested party. All medical bills above one hundred dollars ($100.00) will be handled by the Commission as in the past.

By way of explanation I wish to advise that this plan applies to each distinct medical charge in a case rather than to an aggregate amount of medical items in the sum or more than one hundred dollars ($100.00).

I want to take this opportunity to thank you and your Committee for the splendid cooperation and help you have given the Industrial Commission in working out a plan that would be satisfactory to all parties concerned.

Very truly yours,
South Carolina Industrial Commission.
John H. Dukes, Chairman.

JHD-c

BOOK REVIEWS

ENDOCRINOLOGY IN MODERN PRACTICE: By William Wolf, M.D., M.S., Ph.D. 1018 pages with 252 illustrations. Philadelphia and London: W. B. Saunders Company, 1936. Cloth, $10.00 net.

This is the most unusual book we have seen on the subject from many standpoints. First of all it has the advantage of being a monograph but the author has taken advantage of suggestions from some of the ablest authorities in the world and of course has approached his labors after an exhaustive search of the literature. The field of course is a fertile one for further investigation but promises important developments in the near future. The author has endeavored to present the subject matter from a simple standpoint and in doing so takes up the endocrine glands one by one as is shown by the study of the pituitary gland in Chapter II. under the following headings:

- Anatomy
- Embryology
- Histology
- Biology
- Physiology
  - Anterior Lobe
  - Posterior Lobe and Pars Intermedia
- Diseases of the Pituitary Gland
  - Infantilism
  - Mongolism
  - Dwarfism
  - Frohlich's Syndrome (Dystrophia Adiposo-Genitalis).
  - Dercum's Disease
  - Schuller-Christian Syndrome
  - Simmonds' Disease
  - Laurence-Bisedl Syndrome
  - Gigantism
  - Acromegaly
  - Diabetes Insipidus
  - Pituitary Obesity
  - Basophile Adenoma of the Pituitary (Cushing's Syndrome).
  - Pituitary Tumors
  - Pituitary Epilepsy
- Summary

A somewhat similar treatment of each gland or simple combination of glands follows throughout the book. As a result of these studies a very worthy effort has been made to draw conclusions that will be helpful to the practitioner of medicine. There are chapters on symptomatology and on laboratory findings. There is a very good discussion of therapeutics. There is is an excellent chapter on diseases of children.

THE EYE AND ITS DISEASES: By 82 International Authorities. Edited by Conrad Berens, M.D., Ophthalmic Surgeon, Pathologist and Director of Research, New York Eye and Ear Infirmary; Special Consulting Ophthalmologist, Woman's Hospital; Consulting Ophthalmologist, Veteran's Administration Facility, New York; Lecturer in Ophthalmology, New York Eye and Ear Infirmary; Member of American Board of Ophthalmology; Member of the Society of Surgeons of Paris; Lieutenant-Colonel, M.R.C., U.S. Army. 1254 pages with 436 illustrations, some in colors. Philadelphia and London: W.B. Saunders Company, 1936. Cloth, $12.00 net.

Our Associate Editor, Dr. J. F. Townsend of Charleston, S. C. in his Department of the Eye, Ear, Nose and Throat for August commented on this new book as follows:

"The Eye and Its Diseases, by Berens (Saunders) is one of the outstanding books on its subject. Those who are familiar with the Text Book of Ophthalmology, by Fuch, will realize the wealth of real knowledge Dr. Beren's book contains when I say that it is like Fuch's Text-book of Ophthalmology, made up to date. It has incorporated in it the results of modern investigators and thoughts. I think that it would be impossible to summarize it but I may try to do so sometime. Those who have read Fuch's Textbook of Ophthalmology will know what I mean when I compare Dr. Beren's book with it. Those who have not read Fuch's Textbook of Ophthalmology will find it of interest to do, or better, to get Dr. Beren's book."

This is a book of twelve hundred and fifty four pages and is the product of a large number of collaborators not only of this country but of professors in many of the institutions abroad. It starts off as is eminently wise with the history of ophathalmology for the history of this first great specialty is of the keenest interest to all medical men. Then follows in admirable order a discussion of the anatomy of the orbit, the eye ball and its adnexa with several other chapters on anatomical land marks in both human and comparative anatomy. The physiology too has not been neglected. Then the patient steps into the office of the practitioner and since the book is written for the general practitioner as well as the student and specialist it is important that a clear cut routine be followed on the part of the doctor. This has been well done. In the following chapters of the book it would appear that practically every phase of ophthalmology has been considered. There are many admirable illustrations throughout the volume.

SURGICAL CLINICS OF NORTH AMERICA: Issued serially, one number every other month. Volume 16, Number 3. New York Number—June 1636. 277 pages with 79 illustrations. Per Clinic year February 1936 to December 1936.

Paper. $12.00; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company, 1936.

These clinics have become more and more practicable for the Surgeon as well as the general practitioner. This number is representative of the best surgical practice in the hospitals of New York City. There is an interesting chapter by Farnum on cardiac disorders in surgical patients. The question of the anesthetist, his experience and his skill is mentioned and then what are the anesthetic agents of choice of the large number now available. He says this about the subject. Open drop ether is, I think, the safest anesthetic with previous sedation. He does not approve of spinal anesthesia in these cases and states that gas anesthesia has its objections. On the whole the author of this article believes that the cardiac deaths have probably been over emphasized and that there is a considerable field of safety in operating on these patients. He warns against the menace of cardiac death in the unknown cardiac risks.

Dudley at Bellevue appeals for the Murphy button in certain cases rather than suture anastomosis.

Potter of Bellevue writes well on the common infections of the hand.

There are many other practical chapters in this volume.

THE AMERICAN MEDICAL PROFESSION 1783 to 1850. By Henry Burnell Shafer, Ph.D., New York, Columbia University Press, London: P. S. King & Son, Ltd., 1936, Price $3.25.

This brief study of the American medical profession during the years from 1783 to 1850 serves a two-fold purpose. It covers a period which has been neglected by writers on medical history. There is also the sudden discovery of the anesthetic use of ether, followed by the whole medical revolution. Obviously, during these years the foundations of this revolution were laid. What were they? They were the application of the scientific spirit to medicine, the extension of medical education, the development of societies and medical literature and the arousing of an interest in medicine. A thorough study of the transition of medicine, in America, from colonial to modern practices is attempted in this volume.

Besides its usefulness and interest to the medical profession the book supplies the background of social history insofar as medicine is concerned. It gives the social historian an account of medical activity in the United States during a period for which there is little secondary material. The emphasis upon the United States, excluding European activities unless they affected American development, should be of especial value to the historian of American culture.

The table of contents indicates the transition years of American medicine: 1. American Medicine at the Close of the Eighteenth Century; 2. Medical Education; 3. Medical Education: Studies and Problems; 4. The Practice of Physick; 5. Medical Ethics and Fees; 6. Medical Literature; 7. Medical Regulations and Societies; 8. Developments in American Medicine; Bibliographical Note; Index.

BEWILDERED PATIENT. By Marian S. Newcomer, M.D., Boston, New York, Hale, Cushman & Flint, Publishers, 857 Boylston Street, Boston.

This book is an effort to interpret many of the important developments of modern medicine to the layman. The contents are as follows:

I. Land of Bewilderment
II. More Than Unaided Eyes Can see
III. Resistance to Disease
IV. Your Dynamic Self
V. Tiny Things That Changed Man's World
VI. Planning The Family Nutrition
VII. Creative Instincts And The Sex Cycle
VIII. Inklings Of Your Intangible Self
IX. What A Physician Can Do For You and Your Family
X. Choosing A Physician
XI. Consultation And Cooperation
XII. A Complete Physical Examination
XIII. Playing Fair And Square With The Medical Profession
XIV. Medical Costs To The Average Family
XV. Home Care of The Sick
XVI. Keeping Fit
XVII. Meet Emergency And How
XVIII. Alarming Accidents
Appendix
Medical Terms And What They Mean
Your Medicine Cabinet

IMMUNOLOGY. By Noble Pierce Sherwood, Ph.D., M.D., Professor of Bacteriology, University of Kansas, and Pathologist to the Lawrence Memorial Hospital, Lawrence, Kansas, Illustrated, St. Louis, The C. V. Mosby Company, 1935.

This book was written primarily for students in medical schools and laboratories and is to be supplemented by laboratory experiments. Even so the busy practitioner will find here much information valuable in his practice. It is a book of six hundred and eight pages and many good illustrations. The whole subject of immunology is a fascinating one and challenges the progressive scientific mind. There is much yet to be learned and even much to be unlearned in this field. The author is a teacher of extensive experience.

EXAMINATION OF THE PATIENT AND SYMPTOMATIC DIAGNOSIS. By John Watts Murray, M.D., With Two Hundred Seventy-Four Illustrations, Second Edition, Price $10.00, St. Louis, The C. V. Mosby Company, 1936.

Most physicians develop a more or less routine in the examination of their patients. Some have

simple methods and others very complicated procedures. Somewhere between the two extremes there is probably a satisfactory working program. Books are helpful but every patient is a new problem and absolute routine must be deviated from very often in order that the patient may have the benefit of an individual diagnosis. It is generally conceded by the ablest clinicians that a properly taken history is of paramount importance. The author of this book has carefully considered this phase of examination of the patient. This is quite an extensive write up of the whole subject. There are twelve hundred and nineteen pages. The book first appeared in 1926 and this second edition therefore comes out after ten years. In a decade not so many epoch making advances occur in medicine yet there are always a few of importance. This fact has given the author the opportunity to add most of the newer methods of examining the patient. It is a good book to have on one's desk for frequent reference.

ARTHRITIS AND RHEUMATIC DISEASE. By Maurice F. Lautman, M.D., Consultant to the United States Public Health Service Clinic and Director of the Department for the Study of Arthritis, Levi Memorial Hospital, Hot Springs, Arkansas, With a Foreword By Morris Fishbein, M.D., Editor, Journal of the American Medical Association. New York, Whittlesey House. London, McGraw- Book Company, Inc., 330 West 42nd Street, New York, N. Y. Price $2.00.

This is a new book just off the press September 1. It is the second volume of a series published for the information of the layman. Dr. Morris Fishbein, Editor of the Journal of the A. M. A. writes the introduction. The basic idea of the book is to offer an optimistic viewpoint to the layman in regard to arthritis to displace the rather common view that little hope is available for one who is unfortunate enough to suffer from this disease. The author is in position to have the benefit of a large experience at Hot Springs and therefore his book is authoritative. The volume is a reflection in part of vast studies taking place in this country and abroad about all phases of rheumatism. It would appear that we are nearer to a solution of some of the causes of these disabilities than ever before. It is indeed a comfort to know that multitudes of people suffering from rheumatic disorders do get symptomatically well. To bring about this happy issue we may not yet depend on any specific medication one hundred per cent. It is still necessary according to the author to resort in large measure to rest, proper diet, proper exercise, in short a hygienic life to get the best results. True there are many forms of treatment of great value but for the most part they are simple in application. The exceptional case will tax the ingenuity of the greatest physicians of the world. This is the most sensible book we have seen to put into the hands of the layman for his instruction in regard to the particular malady under consideration.

PROGRAM SEVENTH DISTRICT MEDICAL ASSOCIATION, KINGSTREE, S. C., SEPTEMBER 17, 1936

Invocation.

1. Medical Economics. By Dr. R. C. Bruce, President South Carolina Medical Asso., Greenville, S. C.

2. Double Ureters as a Complication in Other Medical and Surgical Conditions; With Illustrative Reports of Four Cases. By Dr. P. E. Huth, Sumter, S. C.

3. The Non-Specific Treatment of Allergic Diseases. By Dr. Hal McC. Davison, Atlanta, Ga.

4. Pyleo-Cystitis Complicating Pregnancy (With Lantern Slides). By Dr. Hamilton McKay, Charlotte, N. C.

5. The Basis of Prognosis and Treatment in Hypertensive Diseases. By Dr. Robert Wilson, Charleston, S. C.

6. The Surgical Treatment of Pulmonary Tuberculosis. By Dr. Frank K. Boland, Atlanta, Georgia.

7. X-Ray Diagnosis in Diseases of the Colon. By Dr. M. E. Parris, Sumter, S. C.

8. The Exaltation of Symptoms. By Dr. O. D. Baxter, Charlotte, N. C.

9. Maternal Mortality. By Dr. Robert E. Seibels, Columbia, S. C.

10. Report of Clinical Cases.

Dr. E. T. Kelley, President, Kingstree, S. C.

Dr. Carl B. Epps, Secretary-Treasurer, Sumter, S. C.

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Postgraduate instruction offered in all branches of medicine. Special courses are offered in certain subjects. Courses leading to a higher degree also are given.

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Dean, Graduate School of Medicine,
1430 Tulane Avenue, New Orleans, La.

NEWS ITEMS

Mr. H. H. McGill, Superintendent of the Columbia Hospital, announced October 4 that three new internes, all graduates of the University of Tennessee Medical School, had been added to the Staff of the hospital. They assumed their new duties October 1.

Mr. Gill explained that the hospital, in order to have always a group of experienced internes on the staff, had adopted the policy of taking three internes in July and three more in October. During the summer, two junior medical students assisted the three internes who assumed their duties on July 1.

The new internes are Dr. Eva Linn Meloan, of Memphis, Tenn.; Dr. Charles S. Heron, of Chattanooga, Tenn.; and Dr. Samuel L. Applebaum, of Birmingham, Ala. They, with Dr. H. F. Hall, Jr., Dr. Carl S. McMilan, and Dr. C. A. Glenn now make up the staff.

Doctor Meloan is the first woman interne to train at a hospital in Columbia in a number of years.

Sept. 28, 1936.

To the Editor Journal S. C. Medical Asso.

The Scientific Committee of the Georgia Pediatric Society is again ready to announce the program for the coming meeting in Atlanta to be held December 10, 1936. As in the past, we have been very fortunate in securing speakers who are known nationally to the medical profession.

This year papers will be read in the afternoon and evening sessions by:

1. Dr. John A. Toomey, Associate Professor in Pediatrics at Western Reserve University, Cleveland. Dr. Toomey is well known for his studies in contagious diseases.

2. Dr. Julius H. Hess, Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine. Dr. Hess is the author of many books and has made a special study of the care of prematurely born infants.

3. Dr. Henry Helmholz, Head of the Department of Pediatrics of Mayo Clinic. Dr. Helmholz's work on urinary infections in children is well known and he will describe "The Use of Mandelio Acid in the Treatment of Urinary Infections."

4. Dr. W. A. Mulherin of Augusta, assisted by Dr. Alfred Walker of Birmingham and Dr. Lesesne Smith of Spartanburg.

From this short notice you may be assured that an excellent scientific program will be presented in Atlanta, December 10.

Scientific Committee of the Georgia Pediatric Society:

W. W. Anderson, M.D.,
W. L. Funkhouser, M.D.,
M. Hines Roberts, M.D.,
Joseph Yampolsky, M.D.,
Chairman.

September 15, 1936.

Editor, Journal of South Carolina Medical Association, Seneca, South Carolina.

On October 15th, 16th and 17th, 1936, we are giving at Duke Hospital a Post Graduate Course on Diseases of the Heart, Circulation and Kidney similar to the one given last year on Diseases of the Gastro-intestinal Tract. Even though we sent out three thousand invitations last year, there were many physicians who reported that they would like to have attended the course but did not receive notice of it.

I am writing to inquire if you will publish in the October issue of your Journal a notice of the course this year extending a cordial invitation to all physicians in your section to be present at the meeting.

The following is a list of the speakers who will participate in the program: Dr. W. T. Longcope of Baltimore, Md.; Dr. Stewart Roberts of Atlanta, Ga.; Dr. Soma Weiss, of Boston, Mass.; Dr. William Porter of Richmond, Va.; Dr. Edwin Wood of Charlottesville, Va.; Dr. Frank N. Wilson of Ann Arbor, Mich.; Dr. Herman L. Blumgart of Boston, Mass.; Dr. Charles C. Wolferth of Philadelphia, Penn.; Dr. Claude Beck of Cleveland, Ohio; Dr. James C. White of Boston, Mass.; Dr. Mont Reid of Cincinnati, Ohio; Dr. Carl J. Wiggers of Cleveland, Ohio; Dr. William deB. MacNider of Chapel Hill, N. C.; Dr. Hugh Young of Baltimore, Md.; Dr. W. F. Braasch of Rochester, Minn.; and Dr. Louis Hamman of Baltimore, Md.

Thanking you very much for your courtesy, I am Sincerely yours,

Edward S. Orgain, M.D.

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PSYCHOLOGY OF SUB-NORMAL INDIVIDUALS

By
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Clinton, S. C.

The term "sub-normal" implies existence of a norm or standard, whether reference is being made to height, weight, health, emotions, or intelligence. Primarily, the latter is under consideration here.

Identification and Classification of Individuals—By some method individuals have always been classified by others, usually according to their reactions to life, ability to learn, contributions, achievements, etc., but not until the advent of intelligence tests was there a scientific approach. In 1905, Binet, a French physician, constructed a test which has had many revisions. The one best known is that of Terman, done at Stanford, and known by that name. It is not a completely satisfactory instrument, but in the hands of a competent psychologist, used with tests of special abilities and aptitudes, in connection with developmental history and physical examination, it serves well in evaluating certain characteristics of individuals. A random sampling of the population, when subjected to intelligence tests, shows that 50 per cent cluster around one point, with a gradual shading higher on one side and lower on the other. Boundary lines have been used according to ratings and names given to these groups for the purpose of transmission. The largest group is called "normal," those rating above, "superior," "very superior," and "genius,"—those rating below, "dull normal," "borderline," and "sub-normal," "mentally deficient," "inferior intelligence," "retarded," "backward," "feebleminded,"—these terms being used interchangeably, all are designated in terms of intelligence ratings or Intelligence Quotient, as commonly expressed. The average or normal person has a rating between 90 and 110. This is confusing to many, accustomed to think of 100 as a perfect mark. Persons of average intelligence are rarely able to do outstanding work in major colleges or universities, if they are found there at all. There the mean IQ is usually very high. In the psychometric conception of the term, sub-normal includes individuals having an IQ of 70 or less, divided into three groups,—between 70 and 50, called "morons," between 50 and 25, "imbeciles," below 25 "idiots."

Nature of Intelligence—Scientific explanation necessitates defining the nature of intelligence in relation to other aspects of human activities and has stimulated much controversy among psychologists as to the true meaning of intelligence. Binet's conception emphasizes three characteristics of the thought process, (1) Ability to take and maintain a definite direction, (2) Capacity to make adaptation for the purpose of attaining a desired end, and (3) power of auto-criticism. Henderson and Gillespie state that "for medical purposes, it may be taken to mean the ability to understand one's environment and to make use of one's understanding, to earn a living." Clinical investigations have produced evidence showing that there are factors other than intelligence, such as emotional and moral defects, which render an individual incapable of "understanding the environment" and ability to make use of this knowledge in earning a livelihood.

Criterion of Mental Deficiency—Wells would favor the classification of mental deficiency,

Read before the South Carolina Medical Association, Greenville, S. C., April 23, 1936.

"where the person's inability to meet the demands of his environment arises in the main from defective intelligence in the psychometric conception of the term. Whether the defective intelligence arises through congenital, traumatic, or toxic causes is merely academic, save that the cause is generally assumed to be present from birth or very early years, and a distinction from deterioration should be made. Behavior inadequate to the demands of the environment arising in other ways, as unbalanced emotional or instinctive life, intoxication, or diseases of the nervous system, is covered in other not less definite diagnostic classifications (psychoses, psychopathic personalities, etc.)" The definition in most general use is the one framed by the Royal College of Physicians and Surgeons in London and adopted by the English Royal Commission on Mental Deficiency, "A feebleminded person is one who is incapable, because of mental defect existing from birth or from early age, (a) of competing on equal terms with his normal fellows or (b) of managing himself or his affairs with ordinary prudence." Terman, like Wells, prefers that classification be made upon the basis of psychometric findings, as the above definition is stated in terms of social and industrial efficiency. Therefore, an individual having an IQ of 68 might live in the hills where he could pass in his crude environment as normal. It becomes necessary, therefore, in clinical practice, when an individual is presented because of his social and industrial failures, not only to investigate his intelligence but his emotions and his environment.

Inmates in an Institution—Institutions like the State Training School were founded for the purpose of caring for mental defectives according to psychological ratings. The Reform Schools were established for the purpose of reforming the "bad" girl or boy. Society usually waits until they commit a crime, then the courts impose a sentence. Some of these "bad" boys and girls are sent to the Training School, usually by some agency or parents who fear for their future, before they have committed a crime. Their behavior in every respect implies mental deficiency, but psychometric tests do not reveal it. On the other hand, sub-normals are sent to Reform Schools. Who are these "bad" boys and girls? They are children who have erred either because they themselves were constitutionally unfit to meet everyday problems of life as their associates or because external factors have borne down upon them with such intensity they were unable to stand the pressure. Commitment of such individuals to institutions often depends upon the persons or agencies handling the cases. From this discussion we understand that for descriptive purposes an individual's diagnosis cannot be confined to psychometric classification alone. The common additional term used to describe an individual who does not function as he should is "emotionally unstable," which does not describe what is wrong with him but merely conveys that he does not behave like the average. Thus a classification might be, "moron, emotionally unstable" or "normal intelligence, emotionally unstable," etc. So far, states have not provided well for the care and training of the emotionally unstable group. In some large cities there are special classes for them but very few. The poor man's child is usually found in state institutions of this sort.

Classification According to Cause—Previous discussion indicates that the sub-normal, according to psychometric ratings, are not a different species but different only in degrees of intelligence. According to statistics of mentally subnormal, a large percentage are due to inferior germ plasm, the remainder are victims of organic causes and expressed in medical terms are "pathological cases." The former are known as "primary amentias;" the latter as "secondary amentias," differentiated from dementia in that the condition existed from birth or an early age. Under secondary amentia we vnd (1) Cretinism,—three groups,—cretins, semi-cretins, cretinoids; (2) Mongolism; (3) Hydrocephalus, congenital and acquired; (4) Microcephalus; (5) Paralytic types; (6) Epileptic types; (7) Syphilitic types; (8) Inflammatory types; (9) Sense Deprivation types.

A low degree of intelligence is no insurance against mental and nervous disorders to which children in general may be subject. Just as they may contract an organic disease, so they may be affiicted by disorders of the mind and nerves. Definite cases of psychoses have been reported by Hollingsworth in her studies of the

mentally deficient at Bellevue Hospital. While we have no typical cases in our institution, there are those who show such tendencies as being elated, flighty, violent outbursts of temper, with periods of blues, with no particular stimulus for it. Others have false beliefs, delusions, etc.

Case Study No. 1—A.G., girl 14, admitted 8 years ago. Mental age 3-Y 2-M, IQ 22. Five years ago, IQ 30. Shortly after admission was timid, docile, somewhat tractable. At that time, 6 years of age, made little effort to talk. One year later, continued quiet, beginning to talk and proud of personal appearance. Says, "pretty dress." Tendency toward stubbornness, which subsides before age 10. Able to do errands, tidy, cares for self and continues pride in personal appearance. Age 11, able to polish, assist in dressing other children and dressed herself. Never soiled, played with others in games, holds up head and talks. Learned to make beds in addition to other little errands but gets disturbed and upset if she cannot wear clothes she chooses. Age 12, destroyed three dresses in one week. Had to be put in coveralls. When angry, said: "I am going to soil myself." Periods of quiet alternating with irritability. Age 13, began to display very overt behavior. Without reason would bite, pinch, scratch, and choke others. During early morning hours would get jar of urine and attempt to dash in someone's face. Has smeared bed, door facings, and individuals with fecal matter. Possibly, if she had constant attention of one attendant, she might be different, as she is readily quieted by employees, especially if she likes them. Attendants having to give attention to others may account for her type of behavior. She has shown jealous tendencies. Because of tendency to spread fecal matter over building or children, at times, necessary to place her in a wire compartment, removing all clothing. She immediately evacuates rectum naturally or induces it, plastering her body, screaming during the process. Physician reports, on account of masturbation, examination was given to ascertain existence of local irritation. No adhesions or anything unusual found except hypertrophied labia minor. Triple bromides, dr. 1 td, prescribed. Continued this three weeks, during which period she seemed to improve.

There are many others in the Institution older than this girl and about her age, with same IQ level, who have never displayed on any occasion such overt behavior.

Case Study No. 2—E.L. Committed by Court to Training School 1931, age 10-Y 6-M. Now aged 15. IQ 54, now 39. Family history presents picture in foreground of individuals low in intelligence, illiterate, unkempt, against background of poverty and sloth. Father aged 80, mother 47. Four siblings. First few months in Institution was not considered atypical. Then became object of curiosity in her building, did not play with other children, would close one eye, hide her face, laugh in silly way. Food had no appeal, occasionally would hide behind a tree, then get up and run as though something were after her. Employees unable to teach simplest kind of work. When polishing floor, would take the handle, laugh and grimace in manner above mention, move on, if told over and over. Later, refused to go to bath room unattended. Would cover herself entirely to escape being caught by someone under her bed. Often named one of the boys in the Institution. Would take her fore-fingers and thumb, arrange in a circle, hold to her nose for long periods as though smelling something, then rise, throw her shoulders back and rapidly walk away as though she had an objective. Early in year 1934 became very excitable; necessary to take her out of school where she had learned to write her name, and take part in other activities on pre-primary level. Repeatedly asked to go and stay with the boys. At other times said certain ones were after her. In June was permitted to go for visit. Continued this behavior at home. Was much worse upon her return. Would scream for hours at a time, "I want to go through"—"I want to go back." Often became so hoarse that verbalization was impossible. During this time, was extremely miserable. Everything possible was done to quiet her. Was taken for rides, given ice cream, candy, placed in different buildings, but to no avail. Finally, in August, 1934, was sent to the State Hospittal for observation. Returned latter part of September. Hospital re-

ported no psychosis but abnormal behavior. Since that time, has been fairly quiet but stays by herself, grimacing, laughing, sometimes says, "Let me alone" when no one is near. Will call and beckon attendant. When latter responds, says nothing.

Case Study No. 3—M.H., girl about 33. Transferred from Girls Industrial School to Training School over 11 years ago. Classified lower level moron. Never learned to read or write. On parole six weeks four years after admission (seven years ago), returned because of severe eruption on hands. An unfortunate disposition, high-pitched rasping voice, emphasizes her virtues by telling on others. Interpretations out of proportion. First years at Institution, usually occupied position of trust such as assisting employees in clothes-room, responsibility for cleanliness of portions of the building where she stayed. Manifested keen interest and delight in her work but maintained superior attitude toward other girls. Prone to make reports which, at times, were taken perhaps too seriously by employees, regarding behavior of others, which did not promote popularity but drove others from her. From external attitude there was no indication of a handicap in this. A few years later, 1930, was placed in school building to work. Here again, moved about on superior plane, not only reporting misconduct of children but of teachers and visitors in the building. In privacy of the office stated clearly her disapproval of teachers who wasted paper, nails, etc. Reported certain visitors, particularly men, for aggressive acts. Now a decided change in attitude of other children toward her. Realizing their own welfare was not at stake, they viewed her behavior with disdain, then detached amusement. During year 1932-33, began to forget some of her duties, never neglected them. Gradually built up elaborate story centering around certain doctors and nurses she knew in her community. These people exist in the flesh but were not concerned with her. About this time introduced a husband. Now believes she was reared in a hospital by nurses and doctors. Gradually all of her family connections have been raised one by one to a high level of social and economic standing. Any time of day, no matter what she is doing or to whom speaking, she radiantly gives some information regarding activities of someone in her imaginary world. This level of feeling is not maintatined at all times. Has periods of depression, may refuse food, will sit for long periods paying no attention to surroundings. On one occasion polished one piano key for an hour. Another time stood rubbing a pitcher with cloth for similar period. During recent psychometric examination, when failures were evident to her, quickly referred to successes in other activities or explained failures. When she could not make change, buying 12c worth of candy from 15c, explained she always changed her money before buying. "My husband always told me to change my money—lots of times, he would order himself." History shows that mother was of inferior intelligence. Only under pressure does she recognize the fact that she ever had a mother, evading by saying, "I was raised by doctors and nurses." Mother spent some time in State Hospital, gave birth to illegitimate child. Social worker, 10 years ago, recommended that girl not be returned to her community, as subject did not approve of home conduct and rejected her family. In present mental state she has a glorious background but is not able to hold this at all times. Then she descends into depression. This alternating reaction is known as the catatonic type in well-defined cases of mental illness. At present, one could not make such a diagnosis of her.

We call attention to psychotic trends in certain kinds of speech defects more commonly found among sub-normal children than normal. Dr. Wallin states: "It is not surprising that there should be a close correlation between speech defects and mental defects. In view of the fact that the mechanism of speech is highly complicated, involving the harmonious integrated action of a number of delicate anatomical, physiological and mental adjustments." Such defects are found in children and adults of high intelligence, the theory being that it is muscular ataxis due to psychic inco-ordination, special reference being made to stuttering and lisping. One anomaly of speech is echolalia. Hollingsworth refers to this "curious tendency found in defectives who are mentally at what Binet calls 'the dawn of speech' to repeat or echo what is

said to them or in their hearing." With the development of attention and memory, in the young normal child, this gradually gives way to the formation of phrases and sentences which have meaning to him and those about him. Some psychologists and psychiatrists are not content with assigning this abnormality to arrested development alone but are of the opinion, from research, that it does not appear as a single symptom. Dr. Martz,—"In any event, most of these children will show certain eccentricities or disturbances of the mind beyond a simple hypophrenia. If they are not actually psychotic, they nevertheless reveal such signs and symptoms as are indicative of a psychotic-like condition. Many recent investigators, such as Greene, Richmond, and Earle, have drawn attention to the frequency with which supposedly feebleminded children are found, upon careful examination, to have either a true psychosis or a fragmentary psychosis. Furthermore, it will be noted that relative mental status of these children is not always constant, as one might expect among mentally deficient but slowly changing, generally in the same direction of regression or deterioration. In these low-grade schizoid cases, the echolalia is not necessarily an outstanding factor but rather one in a whole chain of distinct symptoms which enter into the clinical picture."

Case Study No. 4.—A.B. Boy 13, admitted to Institution 2 1-2 years ago, then 11 years old. Unable to co-operate in psychometric examination because repeats what is said to him. This not only occurs in a normal setting but at the building. If he wants anything, makes a noise but is able to repeat verbatim in a meaningless monotone anything that is said directly to him. Does not repeat parrot-like conversation heard while in a group, as he appears concerned with himself. Has a tendency to be withdrawn (schizoid), will get up and run about the room as though obeying a compulsion. The ill defined erratic movements exhibited in habit-training class have given way somewhat to order. Continues to show distress both in school and at the building. With the palms hits his head in rapid staccato manner. Often takes hands of attendant or teacher as though trying to reveal some inward feeling. Is very fastidious about his clothing, taking extraordinary care in arranging it at night. Refuses to wear clothes not properly repaired. Sneaks into dressing room and secures things that suit him. Will not take sox that do not match. Can bathe and dress himself. In every respect, is the cleanest, neatest boy in his building. If things go wrong on playground, runs to an attendant, buries his face in her lap, makes a noise. After they investigate, he is all right. This condition is known as echolalia, but there are other symptoms beyond this in the clinical picture which betray abnormality.

The following represents a case of speech anomaly much more benign in character:

Case Study No. 5—C.Q. Admitted to Institution age 12, four years ago, now 16. Unable to get psychometric rating. Conversation consists of isolated words, few in number. Accompanied by elaborate gestures and facial expressions. Why he does not talk is unknown. No evidence of impediment, articulates and enunciates clearly words that he uses, and from his behavior evidently understands many other words. The following illustration, chosen from many, is proof: One time, broke a victrola record. When reprimanded by School Principal, registered distress in facial expression. While talking, Principal fitted broken pieces together. The expression of anxiety gave way to delight; pointed to the record and said, "Joe" (boy who did repair work), at the same time pointing in direction of shop. Then spanked himself, put his arm affectionately around Principal. Interpretation: Repair record, punish him (although not punished in Institution, evidently had this experience before arriving), then make up,—everything all right.

Abnormalities of behavior can be traced through all levels of psychological classifications, sub-normal, normal, and super-normal intelligence, not limited to inmates of Institutions. Through every strata, regardless of intelligence, there are those individuals who make inadequate response to their environment. The affective side of life supersedes the intellectual. Therefore such individuals and those with nervous disorders of pathological nature are anchored to lower levels of efficiency and in so far as their total response is concerned, may as well be defective in intellect. Even though the psychological rating is relatively high, these in-

dividuals operate on a comparatively low level of efficiency and cannot be properly trained in the conventional schoolroom; unless the school is designed to fit their individual needs, the classroom will be in disorder and they regress.

In the Institution we have one little girl, age 11, dull normal, who has to be alone for practically all of her schoolwork. She is a hyperactive, dramatic little figure who initiates a colorful environment if it does not appear naturally. Ethics and codes are unknown to her. In the past has built strong defense mechanisms to meet attacks made upon her when she misbehaved. Her characteristic reaction has been, when reprimanded or given a negative reply to her request, to run away, violently attack someone or destroy something that is nearest her.

The following case study represents another girl of comparatively high intelligence who has been unable to maintain her equilibrium either in society or in the Institution, as well as some others of much lower intelligence rating:

Case Study No. 6—L.T.—girl 16 years 6 months. Admitted over 6 years ago. Dull normal. On Achievement Tests, all grades above 7th (almost 10th in literature) except artithmetic, grades 3. Plays third and fourth grade music on piano. Memorizes well. Improvises. Plays mouth harp and dances. If one could stop there! She is a bundle of contradictions. From October to December, 1928, 9 years of age, hospitalized at Children's Hospital, Detroit, where family were for a short time. Both parents natives of this state. They made following report: "Diagnosis: Chorea and Endo-carditis. Patient extremely nervous when admitted to hospital. During stay told of hearing voices from the wall at night talking about herself and doctors attending her. Refused to say what she heard but insisted she heard them talking, also that she heard knockings on the wall." After family returned to South Carolina, psychiatrist from State Hospital urged that application be made to State Training School. Then began a bombardment from parents, social workers, teachers. Finally, petition signed by 7 members of County Delegation. Sent from office of Probate and Children's Court with following reasons for immediate admission: (1) She had been caught stealing; (2) Had to be removed from Special Class in School, gave so much trouble; (3) Ran away, picked up by police; (4) Had been to Salvation Army begging, taken home by them. In addition to taking things, telling stories, etc., she is never quiet. There are long drawn-out audible sighs, queer noises such as clearing throat, coughing, jerking in various parts of body. These do not always appear at one time. One gives way to another. She cries, screams, curses when excited. Because of her tendency to leave the Institution, which she has several times done, it is necessary to keep her under constant supervision, under which she chafes. It is a vicious cycle. She probably runs because of her restlessness. Therefore, must be closely supervised, which increases tension. She is good-natured and affectionate but even when showing such disposition, may have a pair of scissors concealed preparing for liberty. Will voluntarily promise (no one requesting it) never to do that way again. It has been proven when at liberty while at home or away from the Institution without leave, that she did not make a constructive move. In fact, it was her overt behavior that revealed her identity. She has what might be intrapsychic ataxia, inco-ordination between intellect and emotional functioning. Because of her strong delight for music and being an exhibitionist, piano and dancing are comparatively easy. Little or nothing has been said to her about practice, although it is necessary to keep a girl in the room with her during such periods so she won't have the piano in her pocket when she leaves. On one occasion was found with the top off, ready to go down inside. Another time plundered cabinet in the room and took pair of scissors. Unless door is closely guarded, runs out and explores or leaves building.

The average person, even the learned, does not have patience with the child who has ability to learn and won't behave. If he can learn this, why can't he learn that? Why does he tell stories? Why does he steal? Why is it that he does not respond to talks or even severe punishment but does the same things over that he has promised not to do? Children who present abnormal behavior should receive attention from doctors, psychiatrists, or psychologists during the incipient stages. If they can-

not be adjusted in homes and public schools, they should be sent to an Institution before they become battle-scarred with multiple undesirable reaction patterns that take years to undo. Training such children is not an exceedingly difficult problem if they are in very small groups. Information must reach them through any of the sense organs that prove the best avenue for carriage. The formal, conventional schoolroom is no suitable place for them.

There is a large group who move quietly through our training department, evincing no contra-behavior, or feeling, toward work. They seem pleased with the opportunity to learn all they can. Such children could be trained in the public schools if those institutions provided proper kind of training for them and if they had good homes. Both groups of children mentioned above are given standard achievement tests each year. Their rating are very irregular, —example, G 7 reading, G 6 history, G 8 spelling, G 4 arithmetic, etc. It is surprising how far some of them can go when unleashed to advance at will. This uneven classification is not peculiar to sub-normal children, as has been proven with progressive school methods with normal and super-normal children. There is another large group in training who are potentially incapable of assimilating any kind of academic work. Aside from aesthetics, it is economy to establish and perpetuate clases for this type. It took about five years for one boy to keep dry long enough to sit in class. Now he draws pictures, says little nursery rhymes, keeps his clothes buttoned in class and at the building, looks forward to the school period, expresses delight to matrons on returning to building. He might still be sitting on the floor rocking back and forth in wet clothes but is about as independent in his environment as you or I in ours. Another group, incapable of doing academic work, are given more complex forms of handwork and recreation. In the Institution, four groups receive training,—stable, unstable, manual group, habit-training group. We use handwork of all kinds, music, dancing, recreational activities, not only to develop skills but as therapeutic measures with individual approach, to build up self-respect and confidence through doing one or more things well. This does not necessarily imply special ability in these skills but special interest. It is the usual experience of a layman visiting the Institution, after seeing completed handwork, hearing a group singing a cantata in three or four parts from memory, to conclude that mentally defective children have special aptitudes. This is an erroneous conception. Memory of this particular kind (rote), accomplishment of activities requiring skills in motor co-ordination, does not involve the higher thought processes in which they are deficient. Saying it another way, these children might be unable to understand their environment to the extent of being able to maintain themselves independently of society.

How and What Defectives Learn—Those in higher levels of intelligence, but emotionally handicapped, have been discussed briefly above. Can mental deficiency be overcome? With primary amentia, due to inferior germ plasm, heredity,—no, but they can be trained if the intelligence is high enough and there are no emotional handicaps, even though the ceiling be low. Secondary or pathological cases are always doubtful. In some of them, medication, surgery, glandular and nutritional treatment may accomplish much. These individuals often profit by well-rounded manual and physical training. With the third group, who behave abnormally but whose intelligence rating is comparatively high, or even normal, emotionally unstable, the chances for rehabilitation are fair, particularly if taken in time.

Contrary to the prevalent idea of laymen, an institution does not consist of a regimented, gelatinous, negative mass, unaesthetic in appearance, which sooner or later dulls the wits of those who care for them. On the other hand, the entire population presents an interesting, colorful, mosaic design which challenges ingenuity in the interpretation and meaning of its components. To those with a flash of humor, a flare for research, coupled with scientific training, these individuals,—like all humans,—make life interesting.

DISCUSSION

Dr. E. L. Horger, Columbia, S. C.

Dr. Whitten has brought to us a great deal of valuable information in the time allotted. He has dealt with the subject in an instructive manner and his presentation of the subject is extremely interesting.

In regard to testing the intelligence of the individual, there are various methods employed. The Simon-Binet test is greatly used. These tests are of value, however, only when used by one who has had training in their use. Very little value can be attached to the information obtained when the tests are made by one who is not qualified.

Feeblemindedness, as stated, is a congenital condition, or it may be the result of trauma to the nervous system or severe illness in the early years of life in which there results an arrested development of the mind. It is not considered an acquired condition; where, on the other hand, the psychoses are acquired. The lack of intelligence in the feebleminded is due to the lack of development, while in the psychoses it is due to a deterioration of the mind.

The mentally sub-normal individual in many instances has the same motivation or desires as the normal individual; however, is not capable of obtaining his desires according to the demands made upon him by society. The feebleminded individual has difficulty in adapting himself to the demands of society. It is very difficult to train him and often many of his kind become delinquent. It has been stated that there seems to be no question there is a considerably greater proportion of persons of low intelligence among the delinquent than among the non-delinquent population.

Dr. Whitten has presented six very interesting cases. These cases present symptoms which are suggestive in most cases of some psychoses. In regard to psychoses among the feebleminded, many cases do develop distinct psychoses and are placed in some psychotic group; for example, psychosis with mental deficiency. It is possible that a moron will develop into a case of dementia praecox or into some other type of mental disorder. Certain authorities claim that a large percentage of feebleminded individuals have epilepsy, therefore one can readily see that a feebleminded may develop an epileptic psychosis.

To many it may seem that feeblemindedness is a hopeless condition. If one will take into consideration the home, the neighborhood, the school and the environment and will give these mentally sub-normal individuals a chance, proper training and special instruction he will find that many of them can be helped. Little can be expected in the home, because the majority of the parents are feebleminded and are incapable of creating a good environment. Most of the help must come from the schools and the community. Employment and recreation should be provided. If the feebleminded become problems and are unable to do satisfactory work under special instructions, then they should be placed in some institution and given special care and instruction.

THE CARE OF ACUTE HEAD INJURIES

CHARLES O. BATES, M.D., F.A.C.S.
Greenville, S. .C.

In a discussion of "The Care of Acute Head Injuries," we have to appraise the subject with its rapidly increasing importance. Our highway accidents are responsible for a great increase in head injury cases.

Last year there were 36,400 automobile accident cases. The National Safety Council announced 99,000 accidental deaths for 1935. The majority of these traumatic deaths are due to injury to the head.

Swift states there are approximately 112,000 cases of skull fractures annually in the United States.

We have seen a great change in the care of head injuries in the last twenty years. The medico-legal aspect of these cases has assumed considerable importance particularly in regard to keeping careful records.

Let us first consider the less serious head injuries. Lacerated wounds of the scalp should all be treated as infected wounds. The wound should be loosely sutured and drained. In those cases where tight sutures are necessary to control hemorrhage the suture should be removed within forty-eight hours.

The stab wounds inflicted with such instruments as ice picks are becoming more common and are rather infrequently recognized. There is little external evidence of the small wound of entrance. The patient is frequently under the influence of alcohol, and we are perhaps prone to attribute his condition to intoxication. These wounds should always be considered as potentially dangerous. We have had cases in which the pick penetrated the brain with no evidence of paralysis or any manifestation of injury to the central nervous system. A number of cases have been reported from routine necropsies by the office of the Chief Medical Examiner (2) in New York City.

All wounds of the head where there is evidence of soil contamination should receive the prophylactic dose of tetanus antitoxin because tetanus following wounds of the head is more likely to be fatal.

A craniocerebral injury is the most serious injury of the head. It is in this type of injury

that so much has been done in recent years by conservative treatment, and head injuries should be considered serious until proven otherwise. All patients with acute head injuries should be quietly admitted to the hospital, or in some cases should be kept at a home near the scene of the accident. The less the patient is moved in the first twelve to twenty-four hours the better it is for him. We should not allow friends or meddlesome neighbors to cause us to subject our acutely traumatized head cases to an early unnecessary and sometime valueless x-ray examination. This can be done at a later and safer time. A most important factor in the handling of these cases is the choice of a nurse. She should understand the psychology underlying the recovery from head trauma.

The control of visitors and family must be considered. They should not be allowed to discuss the patient's injury and possible future disability. Post-traumatic psychosis or hysteria is often produced by some suggestion implying permanent disability. Let us remember that an injury to the brain leaves for a time a sick mind capable of running the gamut of imagination.

Because of the various degrees of severity the treatment of craniocerebral injuries cannot be standardized. I believe that each case is a case unto itself.

In order to treat these cases properly, a bedside study of the patient should be made. More can be learned in the first few hours concerning the prognosis and after treatment of the patient than at any other time. It is in this period of five or six hours that we must try to determine if there is an extradural hemorrhage, for many authorities believe extradural hemorrhage is the only indication for an early operation. An important point in the diagnosis of extradural hemorrhage is a lucid interval between the initial and subsequent loss of consciousness. The patient is at first unconscious or semiconscious, but later gets up, walks around, and then lapses into unconsciousness again. He has a dilated or fixed pupil on the same side as the hemorrhage. The patient may have paralysis beginning in the face and extending to the arm and possibly to the leg. Convulsions may also follow in the same order. Such a patient should have an immediate subtemporal decompression and a ligation of the middle meningeal artery or some of its branches.

In craniocerebral injuries increased intracranial pressure is always due to hemorrhage or edema. There are varying degrees of brain trauma causing intracranial pressure(3). Let us think of the head injury where there is no fracture demonstrable as a "black eye of the brain." We have seen a slight blow cause minute petechial hemorrhage around the eye, and so the same condition in the brain gives the picture of concussion. The concussion cases usually clear up within a few hours or few days and the only treatment necessary is rest.

In the more severe cases the surgeon should determine how completely nature is compensating for the increased intracranial pressure. Space compensation is the principal function of the cerebrospinal fluid. We have seen large tumors removed from the brain where this physiologic compensation of cerebrospinal fluid had taken care of the patient as the tumor grew and done it so well that the patient was practically symptomless.

It is the duty of the physician to observe this degree of compensation, noting particularly the following:

1. The state of consciousness of the patient, and this is most important of all data. The fact that the patient is unconscious means that the cerebrospinal fluid is not able to compensate for the pressure. The depth of the coma indicates the degree of seriousness of the patient's condition.

2. Restlessness is a symptom that might tempt one to give large doses of morphine. This would be the same as masking the symptoms in an acute abdominal emergency.

3. The pulse rate will remain slow and regular as long as the intracranial pressure is being compensated. A very slow pulse, around 40, or a pulse that is changing from 60 to 100 every few minutes means a losing battle for compensation.

4. The respiration remains slow and regular as long as there is compensation, but as compensation becomes broken the respiration becomes rapid, shallow, and irregular. Cheyne-Stokes respiration indicates marked intracrani l pressure.

5. The change in temperature is a valuable

guide. A rectal temperature should be taken every thirty minutes. When the temperature remains under 102, the pressure is being compensated—each degree above that means increasing danger.

It is in those patients with fracture of the skull and increased intracranial pressure that a most careful and persistent study should be made. The changes in the patient's condition appear so quickly and the time for favorable action is so short that the patient's life, in a measure, depends on the capability of the physician, and by this I do not mean necessarily that a specialist should be in attendance, but a doctor who will give the patient his personal attention and act promptly upon his judgment.

The treatment of shock is the first consideration with few exceptions, and must be brought promptly under control. An emergency dressing must be applied to head wounds, but no wound repairs should be done that will further shock the patient. In some cases 50 c.c. of 50 per cent glucose solution may be given intravenously. Undoubtedly the most efficient treatment in acute craniocerebral injuries with or without increase in intracranial pressure is rest.

Those patients who show evidence of extradural hemorrhage with rapid increase in pressure should have immediate operation with ligation of bleeding vessels. This type of case represents a small per cent of the serious ones.

The cases of severe trauma to the brain with increasing intracranial pressure should be treated with rest, dehydration, lumbar puncture and decompression.

Rest means insuring a quiet room and a special selected nurse, with no unnecessary changing of clothes and baths. Under no circumstances should an x-ray of head be made while patient is still suffering from shock.

Dehydration can best be accomplished by limiting the intake of fluids to 600 c.c. in 24 hours, by administering hypertonic glucose solution, and giving magnesium sulphate. Fay(4) says: "When the pulse pressure approaches the pulse rate, that is the time to dehydrate."

I do not believe in too early and too frequent use of lumbar puncture. It should never be used during the period of shock or to relieve pressure due to subdural or extradural hemorrhage. In those cases where rest and dehydration do not relieve the symptoms of increased intracranial pressure, lumbar puncture should be done. Its repetition should be determined by the results. Do it in those cases which in your judgment are not apt to go on into medullary compression, and do not hesitate to drain 20 to 30 c.c. of spinal fluid at a time. It must be remembered the brain cannot long be subjected to pressure that interferes with cerebral circulation without causing cerebral degeneration or death.

Death is often due to pressure exerted upon the vital centers situated at the base of the brain in the region of the third ventricle, the medulla and pons.

The cerebral hemispheres and cerebellum are not so important in the continuation of life, but are quite important in the intelligent reactions and post-traumatic behavior of the patient. It is in this region of the brain that prolonged pressure causes degenerative changes that are later manifested by psychic changes, loss of mental function, and apparent paralysis and anesthesia. Damage to these centers of intelligence causes prolonged post-traumatic mental sequelae, a condition distressing to the patient and family, and often of serious significance.

Decompression is being less frequently employed—usually only for the specific purpose of removing some localized pressure, or for stopping hemorrhages. One indication for prompt surgery is a compound fracture of the skull where foreign bodies, fragment of bone, and hair may have been driven into the brain substance. Simple depressed fractures can be elevated under local anesthesia after a few days when the patient is out of danger.

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CARDIAC PAIN

By

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In considering the subject of cardiac pain at this time no reference will be made to that caused by primary pericarditis of acute infections, nor will the symptoms of syphilitic aortic disease be discussed except as related to differential diagnosis. The subject matter will be confined largely to symptoms referable to disease of the coronary arteries.

The symptoms of coronary pain are best divided into two related but distinct entities: angina pectoris and coronary occlusion. Angina pectoris as originally described by Heberden refers only to precordial pain, but in this instance the term will be used to describe pain located in any region having its origin in the heart. Angina pectoris is predominatly a disease of the middle and higher social groups and is quite frequently seen among professional people. It occurs far more often among men than women. The greatest number of cases fall into the middle and older age groups, but it also occurs occasionally in the twenties and thirties. The etiology of the pain is still discussable, but the most widely accepted theory is that it is based or coronary artery disease in the large majority of cases. Keefer and Renik (1) in 1928 critically analyzed the various theories as to the etiology of anginal pain, concluding that anoxemia of heart muscle was the only acceptable basis of the symptom. The pathology most often found is atheromatous disease of the coronary artery or the sinus of Valsalva. Syphilis produces relatively very few of the cases of actual coronary disease, but disease of the aorta may cause an obstructive lesion at the mouth of the coronary artery, producing the same effect. Aortic insufficiency with lowered diastolic pressure has been thought capable of producing sufficient anoxemia of heart muscle to cause anginal pain(1), but this mechanism is doubtful. Certain cases of rheumatic heart disease produce a real arteritis of the coronary arteries(2) with decrease in the amount of local blood flow. However, so many cases of extensive atheromatous disease of the coronaries, with almost complete obliteration of the vessels, come to autopsy without any history of angina, and, also, cases of definite angina fail to show any evidence of coronary disease at autopsy. Because of this it is reasonable to suppose a functional basis for the disease, either alone or in association with organic disease, by reflex stimulation through the vagus and sympathetic fibers of the cervical and upper dorsal ganglia. The real functional relationship of the sympathetic and parasympathetic nerves supplying the heart and coronary vessels is not definitely known. As yet in the experimental stage, further knowledge on this subject is awaited with considerable interest. Severe anemias are at times the predominant factor in the production of angina(3) and where the anemia is not the sole cause it may be the precipitating factor. Hypertension per se cannot be assigned as a cause of angina because although frequently seen in association with cardiac pain, a great many of the cases of angina occur in individuals with normal or even low arterial tension. There may or may not be a previous history of cardiac disease. There is often a history of dyspnea on exertion, but it is unusual for frank myocardial insufficiency to precede angina. It is even notable that where decompensation occurs in a patient afflicted with angina, the attacks of pain often disappear.

The classical attack of angina is easily recognized. During or shortly after increased physical or emotional stress, in a middle or old aged man, there is an abrupt onset of severe pain which is described as agonizing, vice-like, knife-like. Beginning over the precordium it radiates to the neck, left shoulder, and down the left arm. The patient is motionless, pallid, and sweating, and has a fear of impending death. The pulse is accelerated and the blood pressure is generally elevated above its usual level. There is no dyspnea, although the patient complains of a smothering sensation. The pain is severe for only a few minutes, and if the patient remains at rest it passes off, leaving slight soreness over the precordium. Within a short time after the attack the patient may appear normal and even go about his usual activities.

Angina often is quite atypical in the individ-

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ual it attacks and in its manifestations. It is these atypical cases which are clinically important from a diagnostic standpoint, as with proper evaluation of pain life saving measures may be taken. The diagnosis often depends entirely on the history and a careful inquiry should be made. Family history of some form of heart disease is frequent. Upper abdominal distress with gas after meals and on exertion is a common method of expression of coronary disease. This apparently is dependent on a close relationship of the reflex pathways of stomach and heart. The symptoms are generally referred to by the patient as indigestion. Pain of coronary disease frequently is not referred to the precordium but is felt in the right chest, the right shoulder, the anterior or posterior aspect of the neck above the fourth and fifth dorsal spine, or the left jaw. The pain may be slight and fleeting in nature or rather persistent. The discomfort may be of such minor degree that months may pass before the patient consults a physician. There is one important fact to be kept in mind; wherever the pain may be localized it comes on with exertion, fatigue, or emotional stress, and is relieved by rest.

The physical examination may or may not afford corroborative data. An associated hypertension is found in a number of cases, particularly in the younger individuals, but the heart may not be enlarged or show any evidence of muscle failure. Except during the attack the pulse rate and rhythm is usually normal. The retinal arteries often, but not necessarily, show significant changes. Patients above fifty almost always show some evidence of arteriosclerosis, but this is so widely found that it can hardly aid in the diagnosis of angina. Changes in quality of the heart sounds and a gallop rhythm, when present, give a definite substantiation of heart disease. Except in aortic insufficiency, murmurs are of no significance. X-Ray of the heart is only of value if it shows evidence of cardiac enlargement, and then this is only corroborative data. An electrocardiographic tracing is helpful in sustaining the diagnosis where evidence of myocardial damage can be demonstrated. Electrocardiographic evidence is however notably unreliable, and a normal tracing is quite consistent with angina. Levine's technique(4) of observing t-wave changes in serial electrocardiograms following the injections of adrenalin appears to offer dangers in the patient with real angina, but may be found useful in certain instances. The use of a tablet of nitroglycrine has been useful to me as a therapeutic test in vague pains in the thorax, upper abdomen, and neck. When prompt relief is obtained, even without a recorded fall in blood pressure, I become more than suspicious of coronary origin of the pain.

It is to be remembered that atypical angina is a common disease and frequently offers considerable difficulty in diagnosis. All of us have experienced the shock of seeing one of our patients develop a coronary occlusion while under treatment for dyspepsia, neuritis, or psychoneurosis. Where any doubt exists as to the nature of suspicious pain, a careful investigation and evaluation of symptoms should be made; and unless the symptoms can be satisfactorally explained, the case should be managed as angina for at least a period of time.

The differential diagnosis of typical angina rarely offers difficulty. Pseudo-angina in a psychoneurotic individual who has observed anginal attacks in a friend or relative may simulate the disease closely, but not closely enough to confuse the careful clinician. The atypical attacks must be differentiated from the psychoneuroses, gall bladder or gastric disease, myositis, intercostal neuritis, and at times arthritis of the spine. Syphilitic aortitis with or without aneurysm frequently produces substernal discomfort that must be differentiated from coronary disease. The Wassermann reaction and fluoroscopic of the chest are quite helpful. Lesions of the diaphgram may also cause pain with the same distribution as angina. Here again a fluoroscopic examination is quite revealing.

The treatment of angina varies considerably in amount and extent in accordance with the severity of the symptoms. Treatment of the immediate attack demands complete rest, administration of nitrite and, when necessary, morphine. Follow up therapy should, as far as possible, be individualized to fit the needs of the patient. In general, the patient should have an added amount of rest and should be protected from over-exertion, fatigue, and emotional stress. The habits of the patient and his daily regime of life should be carefully reviewed

in an effort to uncover any precipitating causes. Angina is notably a forerunner of the more dangerous coronary occlusion, and the patient should be definitely impressed with the importance of these measures. The question of whether the patient should be informed of the diagnosis remains a problem in each individual case. However, in most instances the patient himself soon becomes conscious of the condition and in only the exceptional case can the diagnosis be withheld for any great length of time. The diet should be bland and of relatively low calorie, particularly if there is an associated obesity. The total amount of food should be divided into five rather than three meals during the day. The fluid intake should be sufficient to prevent dehydration. Constipation should be strictly avoided without drastic purging, and mineral oil or a small morning dose of a saline laxative is useful. The drugs of the theobromine group apparently have a dilating effect on the coronary vessels (5) (6), and have a definite place in the diminution or prevention of attacks in quite a number of cases. Any contributory condition such as anemia or hyperthyroidism should receive adequate therapy. Digitalis has no place in the treatment of angina pectoris, as it has been shown to have the effect of diminishing coronary flow (7) (8). Syphilis, if present, should be treated with extreme caution, as the occurrence of a Herxheimer reaction might be fatal. The surgical treatment by evulsion of the cervical and upper thoracic sympathetic ganglia has a certain element of danger, and experience with the procedure is at present limited. There is considerable current interest in a surgical approach to all diseases related to the sympathetic nervous system(8), and the future developments may offer selected patients a greater degree of relief than medical regimes afford. Total extirpation of the thyroid has proved beneficial and is being recommended in certain selected cases(10). The operative mortality among these cases is necessarily high, the eventual outlook doubtful, and further observation of the procedure is necessary before it becomes widely applicable.

Coronary occlusion is seen with increasing frequency as the years advance beyond middle life and is a common affliction in old people with heart disease and arteriosclerosis. However, it is not uncommon below middle age and among Master's 75 cases 6 were 40 years or less(11). The disease has aroused any great interest only in the past twenty years. Rarely reported before that time, more careful diagnosis in heart disease has shown coronary thrombosis to be a common form of heart disease. Frequently diagnosed as acute indigestion in the past, it has, and continues to be, one of the principle causes of sudden death. Pathologically an anemic infarct of the heart muscle; it is, except in rare instances, dependent on a thrombus in situ and only rarely is an embolus from a distant focus found. The left coronary artery or one of its arborizations is the most frequent site of the thrombus. The size of the infarct depends on the site of the thrombus and the extent of the collateral circulation developed. An actual rupture of a coronary artery may well cause the same effect, but such a condition is very rare. By far the greatest number of infarcts are dependent on degenerative atheromatous disease of the coronary artery or the contiguous portion of the sinus of Valsalva. Syphilis and rheumatic heart disease play only minor rolls. Hypertension cannot be assigned as a primary cause of the disease except as it may be the cause of the coronary artery disease and place the heart under difficult working conditions. The incidence of previous anginal attacks is quite high, but in a small percentage of cases an occlusion is the first indication of coronary disease. Frank cardiac decompensation precedes coronary occlusion at times, but the more frequent premonitory symptoms are angina, slight dyspnea or exertion, orthopnea and indigestion, either singly or in combination. A large percentage of cases have their onset while at rest or after only moderate exertion. Apparently food intake is closely related to the occurrence of coronary occlusion, and in Phipps'(12) series of 437 cases 50 per cent occurred within an hour after eating. A small percentage of cases, highly fatal, occurred during sleep.

The pain of coronary occlusion, varying considerably in its severity, is usually very intense, but occasionally may be only of slight degree. The distribution of pain is the same as in angina pectoris, but is most often confined to

the precordium and left arm or the upper abdomen. The patient with a coronary occlusion in contrast to angina pectoris is usually restless or even excitedly active. Dyspnea, cyanosis and some degree of circulatory collapse is customarily present. Vomiting is frequently an accompaniment early in the course and may persist for several days. Where the infarct is quite extensive, circulatory collapse, pulmonary oedema, and shock rather than pain will be the presenting symptoms. Small infarcts, because of the mildness of the pain and paucity of circulatory collapse symptoms, are often passed up as simple angina. The pulse may be rapid but is often quite slow. The area of cardiac dullness is not necessarily increased. The heart sounds usually are of poor quality, the blood pressure falls below its usual level and in extensive lesions is quite low. Pericardial friction is heard in about one third of the cases in twenty-four to forty-eight hours. After a subnormal period the temperature rises to about 100 degrees F. for a few days. Typical electrocardiographic changes as described by Pardee (13) appear within 24 hours and persist for a prolonged period of time.

The course of a coronary occlusion is quite variable and necessarily depends on the location and extent of the resultant infarct and the degree of collateral circulation that can be established. The onset may be quite abrupt or more gradual with increasing symptoms over several hours. When the occlusion is sufficiently large, death is almost instantaneous or follows within a few hours. In less extensive occlusions the patient may linger on a few days or a week before death. But in most instances if the patient survives the first stormy 24 to 48 hours, the symptoms tend to subside, the heart establishes a more stable function, the blood pressure tends to rise, and the chances for recovery are good. Most clinicians reporting cases cite a mortality rate of 35 per cent to 65 per cent. However, because of wider interest in the disease and the recognition of the mild cases, recent reports call attention to a much lower mortality rate and one author (11) reports the surprisingly low rate of approximately 10 per cent. Recovery is accomplished by replacement of the infarct by fibrous tissue leaving a firm scar. Restoration to a considerable degree of health over a period of several months to years is not inconsistent with the disease, and White (14) reports one case enjoying relatively good health for 17 years. There are some rare instances where patients who have been suffering from recurrent angina are definitely improved following the obliteration of the offending artery and its transference into scar tissue. However, the patient who recovers from one coronary occlusion has a grave tendency to the development of other similar lesions, and the rate of recurrence is high.

There are three complications which are notable in the cases of coronary occlusion which survive the acute phase. The development of mural thrombi and embolic phenomena may occur within 48 hours to two weeks and, depending on the location and size of the embolus, offer a varying degree of danger. Sufficient heart muscle may be permanently damaged so that chronic myocardial failure will result and the patient become a chronic cardiac cripple. Rupture of a ventricle is infrequent and may occur several weeks or longer after the acute phase and is necessarily fatal.

The differential diagnosis of the typical case and its course should offer no difficulties. The immediate differential from angina is made on the restlessness of the patient, the prolongation of the pain, and its lack of response to nitrites. Fall of blood pressure, cyanosis, and circulatory collapse do not occur in angina. In cases of sudden death clinically ascribed to coronary occlusion, autopsy at times discloses rupture of an aortic aneurysm or the heart itself. When the pain of coronary occlusion is confined to the epigastrium, it may simulate an acute surgical condition. A previous history of angina, knowledge of previous blood pressure levels, and an electrocardiographic tracing are quite helpful in settling the problem. Also helpful is the fact that in coronary occlusion the pain although constant is subject to exacerbations at intervals of several minutes to an hour. Cases of sudden circulatory collapse with pulmonary oedema should always be suspected of having a coronary occlusion although there is no complaint of pain. The occurrence of persistent pain in other than the precordial portion of the thorax, in any patient with known heart disease, should be viewed as definitely

suspicious, and a precordial friction and slight fever should be looked for. The more frequent use of the electrocardiograph will reveal evidence of coronary occlusion in many cases that would otherwise be overlooked.

Treatment of a coronary occlusion is of the emergency type. Sufficiently large amounts of morphine should be administered to control pain and restlessness. The initial dose should be half a grain, repeating with a smaller dose as necessary. Caffiene can be given to counteract the depressing effect of morphine on the respiratory function. The use of nitrites has been considered harmful by some clinicians (15, 16) and as they certainly offer no relief should be withheld after the diagnosis is established. It is difficult for the physician to withhold adrenalin in those cases with severe collapse symptoms, but the drug may be harmful in overstimulating a myocardium severely damaged. Digitalis certainly has no efficacy in the early treatment of the disease, and it may be harmful, as it has been shown to act as a constrictor of coronary arteries(17). When pulmonary oedema develops, atropine is useful and a venesection of 250 c.c. or more may be valuable. The patient should be placed in a sitting position so that respiratory motion is facilitated. Blankets and heat may be necessary on the extremities, but only light covering should be allowed over the thorax. The administration of oxygen may be gratefully accepted by extremely dyspneic patients. Nothing but cracked ice should be given by mouth for 24 hours or longer and the bowels kept immobile. Following the acute phase the patient should be kept at absolute rest for six weeks or longer. Opiates or sedatives should be given as needed. The diet should be bland, of low calorie, and taken frequently in small amounts. After three to four days give mild laxatives and small daily enemas to prevent straining at stool. The patient is often quite dispondent and should receive considerable encouragement and moral support. The theobromine group of drugs are probably of some value as a coronary dilator(5) in the further treatment. Digitalis should again be avoided unless congestive failure supervenes. After recovery the patient should lead a fully protected life, avoiding any strenuous physical or emotional strain, and the same precautions as to diet should be taken as in the case with angina.

Summary: The various causes of angina pectoris on a basis of anoxemia of heart muscle have been discussed and the importance of recognition of the disease in its atypical form stressed. Treatment should be instituted principally along the lines of protection from physical and mental stress. The theobromine group of drugs may be useful and digitalis is to be avoided.

Coronary thrombosis as an important form of heart disease is being increasingly recognized, and with the institution of proper therapy the mortality rate observed is considerably lower than it was formerly thought to be. In contrast to angina pectoris the patient is active, pain is prolonged, and evidence of circulatory collapse is usually present. The importance of morphine rather than nitrites is to be stressed. Prolonged rest and attention to diet should be prescribed after the acute phase.

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DISCUSSION

George R. Wilkinson, Greenville:

The reader has made it quite plain that pain in the heart is due, so far as our knowledge goes, to two great causes only: namely, angina pectoris and coronary occlusion. The mechanism for the pain is chemical, induced by mechanical means. The idea that pain can be produced by pressure alone holds for the heart as well as it does for the rest of the body. Whether it be a spasm that shuts off the blood supply or a mechanical device in the nature of an embolus. the pain comes from the lack of blood to the part. The chemical change that comes from the reduced amount of oxygen in the tissues produces a chemical pressure which in turn causes pain.

The treatment is directed toward maintaining an even flow of blood. First, the demands for more blood are reduced, or mitigated. Second, agents are used that increase the flow during the coronary crises.

In the experience of the discussor, the following disorders have, at times, produced pain which in some measure simulates the pain due to coronary disease in general: mediastinal, lung, and oesophageal tumors; diverticuli of the oesophagus; diaphragmatic hernias; pulmonary embolus; cervical arthritis and upper thoracic arthritis; pleurisy and pleurodynia—all above the diaphragm. Below the diaphragm, gallbladder disease first and foremost, duodenal disease, and diseases of the pancreas.

This is indeed a timely subject and of especial interest to physicians themselves, since coronary disease is so often the cause of their demise.

NEWS ITEMS

Experiments by Dr. Robert B. Taft with radium detection devices, which have brought him national and even international recognition, recently have earned for him the silver medal of the American Roentgen Ray Society, an exclusive organization made up of about 475 of the foremost radium and X-ray experts in the United States and Canada. Dr. Taft is President of the South Carolina X-ray Society, and a former Vice President of the Radiological Society of North America.

Dr. R. C. Bruce, President of the South Carolina Medical Association, visited the Association Headquarters at Seneca, Wednesday, October 21.

Precautions to safeguard the health of students both on and off the campus are being taken at the University of South Carolina. The City Health Department of Columbia has agreed to inspect boarding houses near the University at which students are accustomed to take their meals. Those passing inspection will be placed on an approved list. Classrooms, dormitories, rest rooms, and cafeterias on the campus will be inspected also. A faculty student health committee has been appointed to promote this work. Among the members of the faculty student committee are Dr. N. B. Heyward, University Physician, Chairman, and Dr. Isadore Schayer, Professor of Hygiene and Sanitation.

Miss Eleanor Bishop, daughter of Mr. and Mrs. Littleton Jackson Bishop, of 199 Grove Street, Montclair, was married October 9 to Dr. Thomas Martin Peery of Charleston, S. C., son of the Rev. Dr. John C. Peery of Newberry, S. C., and the late Mrs. Peery. The ceremony took place at 8:30 o'clock at St. John's Protestant Episcopal Church, Montclair, New Jersey. Dr. Peery is Assistant Pathologist at the Medical College of the State of South Carolina.

Dr. Edgar A. Hines, Secretary of the South Carolina Medical Association, delivered an address before the faculty and students of the Western North Carolina Teacher's College, Cullowhee, N. C., October 22, on Medicine as a Vocation.

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NOVEMBER, 1936

DEATH OF DR. D. J. BARTON

The sudden passing of Dr. Barton, President of the Anderson County Medical Society, has caused wide spread sorrow over the Piedmont section of the State and elsewhere. Dr. Barton was a staunch and militant member of organized medicine. He served as Secretary of the Anderson County Medical Society for a number of years and was rounding out his term as President of the Society at the time of his death. He was keenly interested in public health and in the progress of medicine and surgery. He was one of the organizers of the Piedmont Post Graduate Clinical Assembly which recently closed such a successful session in Anderson and he had plans in mind for the extension of the scope of the Assembly throughout the South Atlantic States. Dr. Barton was solidly behind the work of the State Medical Association and ready at all times to promote its best interests. He was a genial gentleman and enjoyed a wide circle of friendships both within and without the profession. He was a graduate in pharmacy, having practised this profession prior to his study of medicine. He was a graduate in medicine of the Medical Department of the University of Georgia. He was born at Townville in Anderson County and was 55 years old.

FOUNDERS DAY MEDICAL COLLEGE

The celebration of Founders Day at our State Medical School should continue to attract larger numbers of the profession each year for with experience the programs become more varied and attractive. It would be a fine gesture of appreciation if several hundred doctors should attend the clinics and the various other features of the program at the college in Charleston, November 5. Such an effort would greatly encourage the Board of Trustees and the faculty of the college in their commendable efforts to raise the standards of medical education in the South. The South Carolina Medical Association from its organization in 1848 has shown a keen interest in the affairs of the College. There has been a splendid reciprocal relationship existing between the two organizations. The Journal has benefited in large measure by the scientific contributions of the members of the faculty. It would be a very enjoyable occasion indeed if a large number of the old grads should attend the exercises along with the students of the college. Most of these young men come from our own state and are well known to the physicians in the various communities from which they come. A South Carolinian does not have to be urged very much to take a day off and

spend it in the delightful environment of the City by the Sea.

A glance over the program discloses its practical aspects for the busy doctor who may be able to leave his practice for a brief period. The special guest this year is Dr. Reginald Fitz who comes from one of the great medical centers of the world. Dr. Fitz is Professior of Medicine at Boston University, and a graduate of Harvard. He was formerly House Officer at the Massachusetts General Hospital and has been Resident Physician at the Rockefeller Hospital, New York. He was at one time on the Staff of the Mayo Clinic. He was Associate Professor of Medicine at the Harvard Medical School and as a medical historian and clinician is well known throughout the country.

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

FOUNDERS DAY NOVEMBER 5, 1936

PROGRAM

Founders Day celebration at the Medical College, which has in the past proved so successful, is expected to be an interesting occasion this year. The Medical College extends a cordial invitation to all physicians to attend the celebration.

Morning Clinics—Roper Hospital

9:00 to 9:30—Fractures About the Elbow. By Dr. F. A. Hoshall, Charleston, S. C.

9:30 to 10:00—Results of Surgical Treatment in Tuberculosis. By Dr. W. A. Smith, Charleston, S. C.

10:00 to 10:30—Endometriosis. By Dr. A. J. Buist, Charleston, S. C.

10:30 to 11:00—Heart Disease of Nutritional Origin in Children. By Dr. J. I. Waring, Charleston, S. C.

11:00 to 11:30—Hypertrophic Arthritis. By Dr. George Wilkinson, Greenville, S. C.

11:30 to 12:00—Importance of the Time Factor in Peritonitis. By Dr. R. G. Doughty, Columbia, S. C.

Luncheon—1:00 P.M. — Medical History Club, Fort Sumter Hotel.

Afternoon

4:00 to 5:00—Medical Clinic. By Dr. Reginald Fitz, Boston.

Evening

8:00—Banquet, Fort Sumter Hotel.

Founders Day Lecture: "From Cow Path To State Road: An Historical Ramble." By Dr. Reginald Fitz, Professor of Medicine, Boston University.

Dr. Fitz is prominent in medical circles and a member of the Council on Medical Education of the A. M. A. He will make a brief address at a luncheon sponsored by the Medical History Club of Charleston. Visiting physicians are invited.

X-Ray Apparatus on Display at the Medical College

The William Henry Johnson memorial museum of X-ray apparatus has been instituted on the second floor of the Medical College building said to be the second X-ray museum in a medical college in the United States.

Containing apparatus dating back to the 1900s, only a few years after Roentgen discovered the ray in 1895, the museum was opened for inspection following a recent meeting of the Medical History club, an organization of local physicians.

Apparatus is shown that was used here by the late Dr. Johnson, Dr. Fleming McInnes and Dr. Robert Wilson. It covers the field to 1920.

Later the club hopes to add more apparatus, and also photographs and sketches of pioneers, both in Charleston and in the field generally. Dr. Hillyer Rudisill, Jr. was largely instrumental in collecting the apparatus for the club.

Dr. Wilson, Dean of the Medical College, read a sketch of Dr. Johnson at the meeting of the Historical Club. His son, Dr. Robert

Wilson, Jr. read a paper on Eighteenth Century Medicine.

Increased Appropriation aids Medical College

The increased appropriation for the Medical College secured largely through the efforts of the medical profession of the State has allowed the college to make some very necessary and desirable additions to its teaching staff. These additions have gone far toward reaching the suggested improvements in the college staff. It will be recalled that the committee of the A. M. A. which inspected the college last year, complimented highly certain personnel. With more money available many of the gaps have been filled and new members of the faculty are as follows:

B. D. Chinn, Ph.D. (University of Chicago) Instructor in Bacteriology.

Walter A. Stultz, Ph.D. (Yale) Instructor in Anatomy.

H. D. Bruner, M.D., (Louisville) Instructor in Physiology.

J. E. L. Rebeley, M.D. (Texas) Instructor in Clinical Pathology.

Stanley L. Levin, M.D. (Medical College of S. C.) Instructor in Medicine.

Harold Wood, M.D. (Tufts) Instructor in Pathology.

Leon Banov, M.D., well known for his public health activities and Health Officer of the City of Charleston, has been appointed Assistant Professor of Public Health.

It is hoped that as time goes on the college will increase its usefulness and standing by the addition of more instructors of the same capable type as the above mentioned.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 317 (31713)

April 17, 1936

Case of Dr. Richards, Dr. Chamberlain, and Dr. Robert Wilson, Jr.

Student Gregg (reading):

A negro man, 35 years old, admitted 9-7-35, discharged 10-4-35, readmitted 2-22-36, died 3-21-36.

History: Nocturnal attacks of dyspnoea with orthopnoea since about Jan. 1935. Unable to work since June, 1935, because of increasing dyspnoea on exertion. Swelling of the feet appeared about June, 1935, and has recurred at intervals. About Sept., 1935, the abdomen began to swell, and dyspnoea became more marked. Heart pain frequently. On digitalis therapy for some months. Cough since 1931, occasionally blood-streaked, no frank hemoptysis.

Past Illnesses: Measles, tonsillitis, influenza, rheumatism (1920). Malaria, lues (date?), neisserian infection (3 times).

Exam. in 1935: Near-normal temperature curve, pulse varied from 50 to 110, B.P. 150/0. Apex in 6th interspace 6 inches from mid-line. systolic murmur over apex, diastolic murmur over aortic area. Precordial systolic thrill. Corrigan pulse, also pulsus alternans. Urine and blood normal. X-ray of chest (9-10-35): see chart. EKG (9-11-35) Left axis deviation, premature auricular contractions, notched QRS in II and III. Inverted T in II and III. Discharged as improved.

Exam. in 1936: Temp. 96.6, pulse 100, resp. 24, B.P. 140/40. A well developed man, orthopnoeic. Pupils equal and regular, reacting normally to light and in accommodation. Chest: Dullness in both bases, especially in right. "Expiratory sounds markedly increased and coarse rales on inspiration and expiration over both lung fields, especially over right." "Some widening" of mediastinum. Heart: apical impulse in 7th interspace in anterior axillary line. To-and-fro murmur over aortic area and transmitted downwards along left border of sternum. To-and-fro murmur at aapex. "Very irregular in rate and rhythm, with numerous extra-sys-

toles. Pulse deficit present." Abdomen markedly distended, shifting dullness in flanks. No organs palpated. Pitting edema of feet and extending up onto thighs.

Lab.: Urine cloudy, insufficient for determination of S. G., alb. 1 plus, sugar, acetone and casts 0, 3 leukocytes per HPF, no RBC. Blood (2-24; 3-19): Hb. 55 per cent and 30 per cent (D); RBC -, -; WBC 5350, 8800; polys 79 per cent, and 78 per cent; lymphs 13 per cent and 16 per cent; monos 6 per cent and 4 per cent; achromia, etc., 2 plus. Blood Kolmer neg.; Blood Kline 4 plus. Blood Chemistry (3-9; 3-16): Urea N 41, 82; Creatinin 1.7, 3.6. Sputum (3 exams.): mucoid, leukocytes 3-4 plus, assorted bacteria 2-4 plus, no t.b. Abdominal Fluid (3-4; 3-16): Sp. Gr. 1.016 and 1.022; quantitative albumin 4 per cent and 3 per cent.

Course: Temp. subnormal for entire period of hospital stay, excepting for one rise to 100; about 97 for last 3-4 days. Pulse 60-90. Resp. 24-28. Little apparent change in clinical appearance of patient during hospital stay. Coupled premature ventricular contractions (or pulsus alternans?) appeared on 3-5-36 and continued until 3-9; digitalis discontinued on 3-5. 2000 cc. of clear straw-colored fluid removed from abdomen on 3-2-36, and 2000 cc. of similar fluid removed on 3-14-36. Edema did not disappear, remained orthopnoeic. Died on 3-21-36 at 1:55 A.M.

Dr. Robert Wilson, Jr. (conducting): Mr. Baldwin, will you analyze this case for us?

Student Baldwin: This man has a history of a chancre, although the duration of his infection is not known. The Kline test is four plus. There is a loud diastolic murmur at the aortic area, as well as a to-and-fro murmur at the apex. The blood pressure is 150/0 on one occasion and 140/40 on another. The pulse is of the Corrigan type. This is a fairly complete picture of aortic insufficiency of luetic origin. The high specific gravity of the abdominal fluid is somewhat hard to explain, but I believe that fluid is a transudate. The to-and-fro murmurs are probably a result of a dilatation of the heart. These factors, coupled with the edema and the pulsus alternans, indicate that myocardial failure has set in.

Dr. Wilson: Mr. Baldwin, in September 1935 there was a systolic murmur at the apex and a diastolic murmur at the aortic area, while in February 1936 there were to-and-fro murmurs at both the aortic area and at the apex of the heart. How can you explain this difference in the two examinations?

Student Baldwin: I can't explain it.

Dr. Wilson: Well, what is a possible explanation of a systolic murmur over the base of the heart? When can such a murmur be due to syphilitic disease?

Student Baldwin: Syphilitic aortitis commonly gives such a murmur.

Dr. Wilson: Mr. Brantley, do you agree with the diagnosis?

Student Brantley: Yes, I agree with the diagnosis of aortic insufficiency due to syphilis. But I believe that there must have been an infection somewhere to bring the hemoglobin down to such a low lovel. There is nothing in the record to explain it.

There was probably a dilatation of the right side of the heart to cause death. I believe that the systolic murmur at the apex was due to dilatation of the mitral ring, and that the diastolic murmur at the apex was an Austin Flint murmur, due to a functional mitral stenosis caused by regurgitation of the blood from the aortic valve over the aortic cusp of the mitral valve during diastole.

Dr. Wilson: How do you explain the cough and blood streaked sputum?

Student Brantley: I can't explain that well. I don't believe that they could have been due to heart failure and have lasted as long as five years. We cannot rule out tuberculosis of the lungs, but there is nothing else in the record to suggest tuberculosis. There was no material abnormality of the temperature curve. Tubercle bacilli could not be found in the sputum. The abdominal fluid appears to have been a transudate rather than an exudate.

Dr. Wilson: Mr. Hall, how do you explain nocturnal dyspnoea and orthopnoea?

Student Hall: This counds like cardiac asthma, and suggests disease of the aorta, probably aortic insufficiency.

Dr. Wilson: Yes, cardiac asthma occurs in aortic insufficiency, but is probably even more common in hypertensive heart disease.

Does the electrocardiogram help any?

Student Hall: The left axis deviation suggests hypertrophy of the left side of the heart. The notching of the QRS complex and the inverted T-waves may represent digitalis effect.

Dr. Wilson: You say that the QRS complex is notched; if it were also widened, what would that mean?

Student Hall: Delayed intraventricular conduction time.

Dr. Wilson: In this case we have extrasystoles; if auricular fibrillation had been noted, how would that affect the diagnosis?

Student Hall: Auricular fibrillation is very uncommon in simple aortic insufficiency of syphilitic origin.

Dr. Wilson: Mr. Pernwerth, how do you explain the precordial thrill?

Student Pernwerth: I believe that whatever produced the loud systolic murmur also produced the thrill. If the murmur was due to dilatation of the mitral ring, the same might have caused the thrill: almost any loud murmur may give a thrill.

Dr. Wilson: Let's see the x-ray. (Viewing x-ray film) Mr. Bernstein, does this film substantiate or disprove the diagnosis?

Student Bernstein: It does not disprove the diagnosis, but the marked enlargement of the heart shadow, both to the right and the left, certainly suggests pericardial effusion.

Dr. Wilson: Dr. Rudisill's report brings out enlargement of both sides of the heart, and prominence of the left upper border suggested to him that the case was probably one of rheumatic disease of the mitral valve. This film, taken in September 1935, did not suggest pericardial effusion to Dr. Rudisill.

Mr. Bernstein, how do you interpret the coupled beats of the heart?

Student Bernstein: They were probably due to digitalis overdosage.

Dr. Wilson: Will some member of the staff discuss the case?

Dr. Robert Wilson, Sr.: The x-ray picture suggests that there is disease of the mitral valve. Accepting this, we then have two possibilities: syphilitic disease of the aortic valve, with the exceedingly rare syphilitic disease of the mitral valve associated, or concurrent involvement of the mitral and aortic valves by rheumatic infection. This latter is much more common.

Student Pernwerth: Is nocturnal dyspnoea due to syphilitic aortitis or to aortic insufficiency?

Dr. Wilson, Jr.: In spite of the fact that most textbooks on medicine state that nocturnal dyspnoea is a conspicuous symptom in syphilitic aortitis, I do not believe that uncomplicated syphilitic aortitis causes symptoms. When the mouths of the coronary arteries are so narrowed that the nutrition of the myocardium is impaired, or when the aortitis extends down onto the aortic valves, or when aneurysm develops, symptoms will become apparent, but without one or more of these complications I believe that the aortitis is symptomless. Nocturnal dyspnoea develops under circumstances causing failure of the left ventricle, and hence occurs conspicuously in hypertensive heart disease and in aortic insufficiency. Rheumatic disease of the mitral valve seldom causes nocturnal dyspnoea.

Dr. Lynch: Nocturnal dyspnoea must not be due to pulmonary congestion if Dr. Wilson's statement about its rare occurrence in mitral stenosis is true. Pulmonary congestion is probably more marked in mitral stenosis than in any other disease. There is an increased carbon dioxide tension in the blood in mild states of left ventricular failure, and possibly variations in the susceptibility of the respiratory center to the increased carbon dioxide tension of the blood occur during sleep, causing the nocturnal attacks.

As you can see in the mounted specimen (demonstrating autopsy specimen), both the right and the left ventricles are hypertrophied and dilated. The endocardium, especially in the left atrium, is greatly thickened. The myocardium of the left ventricle shows numerous fibrous scars grossly. The aortic valve leaflets are shortened, thickened and puckered, as may be seen in either syphilitic or rheumatic valvulitis. But the aorta itself is quite normal, and this would be very unusual if not impossible if the valvulitis were syphilitic in origin. The mitral valve is somewhat thickened, and the chordae tendineae are shortened and thickened. I believe that there must have been a general stiffness of the whole mitral sys-

tem, possibly with an early or minor grade of mitral stenosis.

Looking backward now on this case (and it is always easier to look back and see these things than it is to look ahead to the diagnosis), I believe that this record can be explained better on the basis of rheumatic heart disease. The x-ray picture, besides showing evidence of disease of the mitral valve, seems to me to be very suspicious of a pericardial effusion (an organizing pericarditis was present at autopsy). This is very commonly seen during the course of rheumatic heart disease, and probably occurs at some time in almost every case.

The presence of cough and occasional blood-streaked sputum in a case of heart disease without active organic disease of the lungs should always cause one to suspect mitral stenosis, since pulmonary congestion is so much more conspicuous in failure of the left atrium (from mitral stenosis) than in other forms of heart failure.

The electrocardiogram showed evidence of severe myocardial damage; this would be much more common in rheumatic pancarditis than in syphilitic heart disease, although it could occur in the latter.

And finally, as Dr. Wilson has already pointed out, if the x-ray picture is taken as definite proof of disease of the mitral valve, the chances are very great that rheumatism and not syphilis has caused this disease of the mitral valve. Syphilitic disease of the aortic cusp of the mitral valve is recorded in the literature, but in our wide experience with syphilitic heart disease here I have never seen such a case. I almost wonder if it actually exists.

The anemia could not be explained at autopsy. But it is not uncommon that such a thing cannot be explained by autopsy. We see in the morgue only the end-stages of disease, and this end-stage may be quite different from the earlier stages.

INTERNAL MEDICINE

J. H. CANNON, M. D., CHARLESTON, S. C.

WHAT'S IN A NAME?

By Geo. R. Wilkinson, M.D., Greenville, S. C.

A great deal of meaning may be conveyed in a name. For instance, Benedict Arnold is the appellation of an individual long since dead, and still the mention of his name brings to the mind of even a child in the grade school a picture of horror. The portrait of the traitor is so rarely shown that it would hardly be recognized. The names Benedict and Arnold are not uncommon, but what fond parent would christen a child Benedict Arnold.

In medical nomenclature, when it is possible, a disease is so designated that the name itself will convey an idea as to where in the body the disease exists and what the causative factor is. When it is practicable, the term is limited further in order that the disease may be more easily classified in the catalogue of ailments. Hypothyroidism is an example of a name that locates the part affected and indicates how its function is impaired .

There is the term "arthritis" which is displacing rheumatism. The word is coming into use and directs the attention to a single feature of the disease. Yet the more one learns about the disease, the more convincing it becomes that the disease affects the body as a whole and is truly a systemic disease. Why not stick to the old name—"rheumatism"—that everybody knows? The word brings to mind a picture that means too much to let it pass into obscurity or disrepute. Rheumatism, if you divide the word, does not refer to any one part; it does not classify or further define the disease; it does not direct the attention falsely. The name represents a definite disease familiar to the medical profession and the laity.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., Charleston, S. C.

"WOUNDS OF THE HEART"

The heart is fast yielding to surgical treatment. The problems connected with it are being attacked by a number of capable workers. The August, 1936, issue of the Journal of Thoracic Surgery is practically devoted to this subject. The article of most practical interest is that concerning stab wounds of the heart.

Dr. Daniel C. Elkin, of Atlanta, gives a brief resume of the history of the treatment of wounds of the heart and reports in detail thirteen cases treated by him. The history is usually that of profuse bleeding from the external wound, during which period the patient feels no evidence of injury—often continuing to fight or running several blocks. Following this there is exhaustion and collapse, frequently with unconsciousness. At this time there is generally cessation of the external bleeding. This chain of symptoms is due to a gradually developing tamponade which seriously interferes with the heart action and results in cerebral anoxemia. This condition prevailed in all of the cases reported. Fluoroscopic examination is of great diagnostic value, as the accumulation of blood prevents the normal pulsations of the heart. If necessary, aspiration may be resorted to for diagnosis or to temporarily decompress the heart in extremis. After diagnosis has been made, immediate operation should be carried out. Nitrous oxide oxygen anesthesia is preferable, as pleural injury is frequent, which necessitates that the anesthesia be given under pressure. The author finds the most satisfactory exposure obtained by reflecting laterally a flap of skin and muscle and excising two costal cartilages. The difficulty is in locating and suturing the wound in the heart. This is facilitated by removing the blood from the pericardial sac and occluding the opening in the heart with the left index finger. The suture is passed well into the muscle, but should not enter the heart chamber. The first suture provides traction as well as partial hemostasis. After control of the bleeding the pericardium is gently cleansed and the anterior opening closed. Drainage may be provided by an opening through the pericardium into the pleural cavity, but never externally. Once the patient has survived the operation, the most important factor in the prognosis is infection. In the thirteen cases reported six patients died: one did not survive the operation; two of pneumonia; one of pericarditis; one of mediastinal emphyema; and one of septicemia.

NEWS ITEMS

Dr. W. A. Sheldon, 69, prominent Pickens County physician, died at his home, Liberty, S. C., October 24. He had practiced medicine for forthy three years. He was a member of the Pickens County Medical Society, the South Carolina Medical Association, an officer of the Southern Railway Surgeons' Association, and an elder in the Presbyterian Church.

Dr. Sheldon is survived by his wife, Mrs. Hattie Norris Sheldon; two sons, W. G. Sheldon, Apopka, Fla. and E. E. Sheldon, Miami, Fla.; five sisters and one brother. Funeral services were held at the Presbyterian Church, October 26. Members of the Pickens County Medical Society with Dr. E. J. Bryson, Dr. J. C. Hunter, and J. E. Kessler served as Honorary pallbearers. Active pallbearers were Drs. N. C. Brackett, J. H. Hutchins, L. R. Poole, J. W. Potts, P. E. Swords, and Robert Jeanes.

Drs. W. C. Hearin and John F. Simmons of Greenville conducted the Maternity and Child Welfare Clinics at the Lonsdale Mill, Seneca, S. C., October 23. These clinics were held under the auspices of the State Board of Health.

WOMAN'S AUXILIARY

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NATIONAL NEWS LETTERS

Mrs. J. P. Simonds, Chairman of Press and Publicity of the Woman's Auxiliary to the American Medical Association, stated in a recent letter to me that the Association was very anxious for each County Auxiliary to receive the News Letters. These are published four times a year, October, January, March, and May. The price for the four issues is $1.00. The News Letters will be the best way in the world for us to keep up with what is going on in this large organization of ours, and I do hope that if each member of the South Carolina Auxiliary cannot subscribe to the Letters, each County Auxiliary can do so. Please send your subscriptions to Mrs. Lucius Cole, 1117 North Lathrop Ave., River Forest, Ill., as she is Chairman of Printing and Supplies.

Mrs. I. Jenkins Mikell, Chairman
Press & Publicity.

THE PICKENS COUNTY AUXILIARY

The Pickens County Medical Auxiliary sponsored an address, October 16, 1936, at the High School Auditorium, Dr. J. Warren White of the Shrine Hospital for Crippled Children in Greenville, S. C., being the speaker. He was introduced by the Auxiliary President, Mrs. J. L. Bolt.

Dr. White spoke to the Student Body of the Easley High School and to visitors on "Posture." His address was very interesting and instructive. Diagrams of correct and poor posture were also shown.

Mrs. W. B. Furman,
Publicity Chairman.

RIDGE MEDICAL AUXILIARY

The Ridge Medical Auxiliary met with Mrs. David Garvin at Ridge Springs in her attractive home on Main Street, October 19, 1936. The meeting was called to order by the president, Mrs. Garvin. After prayer the business program was carried out.

A very interesting paper was read by Mrs. T. G. Asbill on the Indian Medicine Man. A number of plants that the Indians used as medicine were mentioned. Mrs. W. P. Timmerman exhibited a specimen of Ilex Vamitara. A number of Indian relics were arranged on a table, such as a large piece of birch bark, a pottery vase, a peace pipe, a cook pot made by the Indians, a bead bag made by an Indian girl named Mildred Crow, a pair of tiny moccasins, a battle axe, a large spear, a small arrow head were displayed by Mrs. T. G. Asbill; Mrs. W. P. Timmerman showed a big collection of arrow heads, mortar and pestle, and a tomahawk; Mrs. E. C. Ridgell displayed several tomahawks, arrow heads, a pestle, a large Indian spoon that was given her grandmother, Mrs. Julius Banks, many years ago by a half Indian woman named Millie. Mrs. W. P. Timmerman told a beautiful Indian legend; she also showed a scrapbook containing a number of pressed medicinal plants.

The Auxiliary was well attended by members and several visitors; one new name was added to the roll. At roll call the members answered with the names of the Indian Tribes.

At the close of the meeting the doctors of the Ridge Medicaal Association as well as the

Auxiliary members were entertained at a delicious salad supper by Dr. and Mrs. Garvin. Every one left feeling that Dr. and Mrs. Garvin were charming host and hostess.

Cleo A. Ridgell,
Publicity Chairman.

The 29th Convention of the South Carolina State Nurses' Association was held in Florence, October 29-31. Dr. C. Fred Williams, Superintendent of the South Carolina State Hospital, and Dr. W. R. Mead, of the McLeod Infirmary of Florence, appeared on the program. Miss Laura Blackman, of the State Board of Health, was elected President.

Dr. Frank L. Geiger, Director of the Oconee County Health Department, has been transferred to Colleton County. Dr. W. B. Furman, Director of the Pickens County Health Department, will also have oversight of the Oconee County Health Department for the present. Dr. Furman attended the American Public Health Association which met in New Orleans, October 20-23.

Dr. T. L. W. Wellbrock, formerly of Charleston and Assistant in the Division of Surgical Pathology in the Mayo Clinic, is enjoying an extensive European clinical trip, visiting London, Hamburg, Berlin, Prague, Munich, Zurich, Freiburg, Vienna, Budapest, and Paris. Dr. Wellbrock is a frequent contributor to the Journal.

Dr. P. M. Workman of York visited his friend Dr. Harry Ross, Seneca, S. C. recently.

Dr. David Lyle, 57, York County senatorial nominee, died at 10:30 P.M., October 25, Rock Hill, S. C. His death was attributed to angina pectoris. Dr. Lyle has long been a political figure in the county. He has been a member of the General Assembly and has also served the City of Rock Hill as Mayor.

Dr. Lyle is survived by his widow; two sons, David and Nash, two daughters, Misses Jean and Henriette Lyle; two brothers and two sisters. Funeral services were held in the A. R. P. Church, Tuesday morning, October 27, and interment followed at Edgemoor, in Chester County. Dr. Lyle was a native of Chester.

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THE SANATORIUM IS a private institution with 150 beds, located in the Ginter park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

THE PLANT consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded 50-acre lawn, surrounded by a 120-acre tract of land. Remoteness from any neighbor assures absolute quietness.

THE LARGE number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

THE BUILDINGS are lighted by electricity, heated by hot water, and are well equipped with baths.

THE SCOPE of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Five physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

SYSTEMATIZED out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

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PULMONARY ACTINOMYCOSIS

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Pulmonary Actinomycosis is a rare disease but occurs often enough in any large clinical medical service to force clinicians to be on the alert for its presence. Its incidence is about .053 or one case out of every 1883 cases, medical and surgical.

It is a fungus infection, the etiological agent being one of several strains of Actinomycosis. Eight strains have been described as pathogenic in man. The Actinomycosis bovis is the strain most frequently mentioned as being the etiological agent. This is a non-motile, non-spore-bearing, gram negative anarobe. It appears as the center of tangled threads surrounded by a zone of clubbed ends. Shaw and Bigger report a case of Actinomycosis with recovery due to Actinomycosis Necrophorus. Baer and Klemmer report a fatal case that was due to Actinomycosis Graminis, an aerobic fungus. This organism had previously been considered a saphrofyte.

Sanford in 1925 collected 680 cases of Actinomycosis. Langenbeck in 1845 reported the first case. It was recognized by sulphur granules found in pus from vertebral caries. The first case of Pulmonary Actinomycosis was reported in this country by Hodenpyl in 1890.

Organisms are found on vegetation, especially on corn stalks. In experimental work, seeds have been inoculated and the fungi have appeared on the stalks. They are also found in dust, pollen or chaff from grains. Infection occurs by ingestion of infected material, aspiration of infected dust, chaff, pollen or foreign bodies or by inoculation from wounds made by infected material such as barley beards or grain stalks. The organism has frequently been demonstrated in the digestive tract of man, and is doubtless due to the prevalent habit of chewing grain stalks, straw, or blades of grass. Aspiration as a means of infection has been proved by finding an aspirated foreign body as a bit of carious tooth or barley beard in the lungs, surrounded by the organisms. Workers in grain fields, tobacco factories and distilleries or about threshing machines are often victims of Actinomycosis. Many cases have been reported in which infections of the mouth, throat, tongue or neck have directly followed wounds by grain stalks or barley beards. It is uncertain whether or not the organisms are able to pass through intact mucous membrane, but it is a well established fact that the disease may be caused by the inoculation of materials, frequently known to carry the fungi, into the mucous membrane. Men who are associated with affected cattle have been known to acquire the disease but there has never yet been reported any authentic instance in which man was known to have been infected directly from cattle or from other men. It is also well known that healthy cattle may be closely associated with infected ones without acquiring the disease. Therefore, it is thought that in all probability man and animals are infected from a common source such as the resting stage of the organism or vegetation. Certain investigators believe the fungus is often harbored in a dental cavity or a pyorrhea pocket where it is a constant source of danger.

Actinomycosis usually occurs about the face and neck in the form of a chronic discharging

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sinus. The lungs are frequently involved. A sinus may appear in the chest wall and it is from these sinuses and from the sputum of infected individuals that the sulphur granules are collected. The fungi may be demonstrated in the sulphur granules. It is sometimes very difficult to demonstrate the sulphur granules. Granules are more likely to be present where there is considerable development of connective tissue and where the progress of the disease is slow with manifest resistance on the part of the tissue, while in the relatively rapidly progressive cases or those in which there is little evidence of resistance on the part of the tissues to the infection, clubs may be wanting on the granules. The frequency with which the lungs are involved in comparison with other parts of the body is shown by the fact that only fourteen percent of the cases of Actinomycosis are of thoracic origin. Eighteen percent of the cases occur primarily in the abdomen and sixty percent in the cervico-facial region. Actinomycosis is often primary in the lungs as demonstrated by numerous case reports.

Torek believes that in his cases the primary infection was in the lungs and that the cervical region was secondarily involved. Numerous case reports in which the cervico-facial region was free of involvement lead us to believe that this disease quite often occurs as a primary pulmonary involvement.

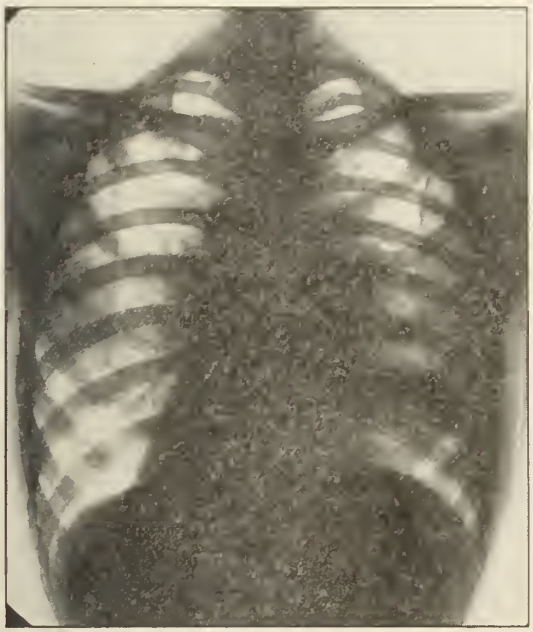
Symptoms of the disease are cough, expectoration, blood-streaked sputum, hemoptysis, loss of weight, loss of strength, fever of an irregular type, and pleural pain. Frederick T. Lloyd lists pleural pain as an early typical sign. Later in the course of the disease sinus formation is noted in the chest. The picture may be that of a severe bronchitis with an area of bronchopneumonia. There may be consolidation of one or more lobes. Abscess or gangrene are frequent end results. The most characteristic thing about the pathology of the lesion is the formation of a large amount of granulation tissue and later connective tissue and spread of the disease process without respect for the surrounding tissue. When the disease spreads to the pleura, the visceral and parietal pleura are sealed together and a sinus is formed through the chest wall without formation of empyema. The same is true if the diaphragm is invaded. The bones are often invaded. In several cases reported the ribs, sternum, and clavicle were entirely destroyed. In Walsh's case the humerus was also invaded. Kirklin states "there is only one roentgen sign which when present might help materially to establish a diagnosis of Actinomycosis:,—that is involvement of the ribs or sternum. This may be shown by areas of destruction with or without reaction of osteomyelitis around it or periostitis. Without these changes in the ribs, purely roentgenologic differential diagnosis from chronic abscess of the lung with or without empyema, from chronic tuberculosis, or from empyema with thickened pleura seems impossible."

Pulmonary Actinomycosis is usually fatal. It is characterized by a long, progressively downward course from three months to fifteen years. At autopsy the lungs of these patients show extreme fibrosis, multiple abscesses with sinus formation or consolidation. The parietal and visceral pleura are usually sealed together by adhesions.

Treatment of Pulmonary Actinomycosis has long been Potassium Iodide orally in increasing amounts to the point of tolerance. Very little has been added to this in recent years and this is still effective in some cases, although one writer reports that he grew the organism in a culture containing two percent potassium iodide. Preston of England reports having found administration of Lipiodol intratracheally and intramuscularly together with tincture of Iodine and Potassium Iodide orally to be of value in a limited number of cases. Wangensteen and others who have had considerable experience in chest surgery suggest excision of the diseased tissue even if this requires lobectomy or pnemonectomy. Curettage of sinuses with cauterization is sometimes helpful. It seems that the most benefit has been obtained in those cases where surgery was applicable. X-ray therapy is recommended for treatment of Pulmonary Actinomycosis in the *Year-Book of Radiology of* 1935. In spite of these methods, however, Pulmonary Actinomycosis still claims a fearful mortality and can be helped very little unless it is treated intensively in the early course of the disease.

Case Report: R. M., age 36, white, male,

farmer. Chief complaint: Pain in chest. Present illness: Four months previous to admission patient developed pleuritic pain in the right anterior axillary line. The pain was acute but was not accompained by cough or expectoration. He had a temperature of 99. This persisted for about ten days, at which time the pain was noted in the right interscapula region. It was still lancinating in character and exaggerated by deep respiration. He began to cough a little at this time and noted slight expectoration. He had night sweats and



progressive loss of strength. These symptoms had persisted to the time of admission. His past health had always been good. Has had an occasional respiratory infection and the usual diseases of childhood. Family history negative for tuberculosis and neoplastic diseases. No knowledge of contact with tuberculous patients.

Physical Examination: Temperature 100, pulse 90, respiration 22, blood pressure 100/70. Patient was a well developed, undernourished white male of about 36. Teeth were dirty and carious. Gums were spongy and retracted. He showed evidence of recent loss of weight. His neck showed no glandular enlargement. Examination of the chest showed that in the right inter-scapula region there was an area of swelling and discoloration about six centimeters in diameter. There was no fluctuation and only a slight feeling of tenderness. Expansion was slightly limited on the right side but otherwise symmetrical. Tactile fremitus was increased over both hilus regions and over the right base, anteriorly and posteriorly. Breath sounds were broncho-vesicular in character over the right base. The spoken voice was slightly increased. His heart was normal in size, and there were no murmurs. His abdomen showed nothing remarkable. Red blood count was 3,800,000, hemoglobin 78 percent. White blood count was 12,000, 72 per cent polys, 28 percent lymphocytes. Wassermann was negative. His urine was negative. On October 7, 1936, the indurated area in the right scapular region was incised. There was a clear, straw colored discharge containing sulphur granules.

Pathologist's Report: A sinus existed at seventh interspace, right, interscapular region. The sinus showed longitudinal stiration with peripheral induration. Was red and somewhat indurated. Typical "sulphur granules" were expressed and these were crushed beneath a cover glass and examined microscopically. Typical club bearing Actinomycosis was demonstrated.

The patient was put on Potassium Iodide in increasing amounts to point of tolerance. When last heard from, three weeks after treatment was begun, no progress in his condition had been noted.

Summary: (1) Pulmonary Actinomycosis is a rare disease, characterized by cough, expectoration, pleuritic pain, loss of weight and strength, hemoptysis, fever and eventual sinus formation in the chest wall. Chronicity is characteristic. Diagnosis is extremely difficult, having been made at autopsy in most of the cases reported. Diagnosis can only be made by demonstration of the "sulphur granules" from a sinus or the sputum or by demonstration of branching mycelia in the sputum of an individual with the above mentioned clinical picture.

X-ray plate of patient with Pulmonary Actinomycosis mentioned above.

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SURFACE ANAESTHESIA OF THE TRAUMATIZED URETHRA*

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Traumas of the urethra are frequently seen on an active urologic service. Such are occasioned by ineffectual and traumatic instrumentation of urethral strictures and obstructive prostatic lesions.

Trauma of the urethra demands immediate care. The circumstances invariably make the use of an anesthetic agent, which may be injected into the urethra, desirable. Unfortunately, this entails considerable risk to the patient, because of the previous trauma. Reactions to procaine solutions under such conditions are so common that we never permit its use. In fact, we have seen reactions in people who were not sensitive to the drug, in whom the drug had been forcibly injected into the urethra, as evidenced by the appearance of blood in the solution when the penis clamp was removed. The dangers of the use of procaine in the traumatized posterior urethra and cautions against its indiscriminate use, have been stressed by Bingham(1).

In surveying the field of suitable drugs, because of its comparatively low toxicity, freedom from reactions and prolonged effective anesthesia, diothane seemed desirable to investigate.

This compound was developed by Rider(2) from phenyl urethrane. It is a dull, white, fluffy, crystalline substance. The crystals dissolve slowly in water to give a saturated solution which at room temperature has a concentration of 1.03 per cent. Solutions of 1 per cent and 0.5 per cent have a PH value between 5.1 and 5.6. Such solutions are perfectly stable for indefinite periods when prepared and stored in non-alkaline containers. Alkalies precipitate the anesthetic free base, so that minute traces of alkali present in a solution will, in the course of time, lead to a deposition of crystals.

Its prolonged effect may be explained on the basis that diothane has a definite affinity for protein substances. That this process is reversible is evidenced by the fact that precipitated albumin may be re-dissolved by dialysis. In addition, diothane has some bacteriostatic properties, but this action against bacteria is not sufficient to render the solution "self-sterilizing."

This product has been used experimentally in many of the special fields of medicine. McKim and his co-workers(7) have shown that its chief advantage over the commoner local anesthetics is its low toxicity. They state it is much less toxic than cocain, butyn, novocain, and nupercain. With the exception of nupercain,

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*From the Urologic Service of the Buffalo City Hospital.

the duration of the anesthesia of the cornea of the rabbit is greater with diothane than with the other anesthetics mentioned.

The drug has been proven to be a practical anesthetic in ophthalmology by Krause(3) in 1 per cent aqueous solutions. The applicability of diothane in otolaryngology has been investigated by Stitt(4), who concludes that the preparation is a satisfactory local anesthetic and may be used to replace cocain for all routine uses. In proctologic surgery, Rosser(5) has used Diothane with satisfactory results.

Bandler(6) has used this preparation in a variety of urologic cases. He used 0.5 per cent aqueous solution and found it adequate for anesthesia in all cases except at the meatus, where one per cent solutions were preferable. Ten minutes was allowed to elapse before any instrumentation was attempted. In his group of over three hundred patients no evidence of toxicity was encountered.

McKim, Smith, Rush and Rider(7) reported a series of one hundred and sixty-four cases of instrumentation of the urethra: these included urethroscopic and cystoscopic examinations and treatments, urethral dilatations and internal urethrotomies. With no exception there was a complete absence of any pre- or post-anesthetic discomfort found in some of the other local anesthetics. The best concentration appeared to be about 0.5 per cent. Five to ten minutes was found to be usually sufficient for development of anesthesia.

Our experience with Diothane has been limited chiefly to the traumatized urethra. The procedure was as follows: patients who had recently been traumatized instrumentally, were injected with 30 cc. of the drug to adequately distend the urethra. If the urine was markedly alkaline and conditions permitted, the urethra was first irrigated with 1:1000 solution of acetic acid. This step definitely enhanced the degree of the anesthesia in these infected cases. The drug was retained in the urethra for twenty minutes before any manipulative measure was carried out.

The above technique was used in thirty-two males. The age of the patients varied from 23 years to 91 years. Of these, twenty-six had urethral strictures, in three there was an adenomatous hyperplasia of the prostate, two had chronic pyelonephritis and one had a fibrosis of the vesical neck, and of the operative procedures employed; twenty eight represented some form of dilatation, three were cystoscopies and one had a Robinson catheter passed on a stylet.

In as much as time elapsed since the last manipulative procedure necessarily enters into estimation of the safety factors involved, we herewith present the time interval since the last previous instrumentation.

	No. of Cases
Less than twenty-four hours	1
2 days	11
3 days	3
4 days	1
5 days	3
6 days	1
7 days	6
8 days	1
11 days	1
12 days	1
14 days	2
21 days	1

In one of the stricture cases there was definite evidence of extravasation of the Diothane into the periurethral tissues.

No untoward reactions were experienced. The degree of anaesthesia obtained was satisfactory. Further, all the patients stated that the usual post-instrumental discomfort was greatly minimized.

In view of the apparent safeness of the drug, the next step was the injection of 15 cc. of Diothane into the urethra of 50 patients with urethral stricture immediately following their dilatation. No reactions or untoward phenomena of any kind were encountered.

CONCLUSION

Diothane in aqueous 1 per cent solutions has proved to be an adequate and apparently safe anesthetic agent in a traumatized urethra.

Further, it minimizes the usual post-instrumental discomfort. When feasible, in the presence of alkaline urine, urethral irrigation with 1:1000 acetic acid preceding the use of the drug enhances the degree of anesthesia.

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TOXIC NODULAR GOITRES

By
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Empiricism has played a leading role in the treatment of goitre from ancient times to the present. Iodine in the form of seaweed poultices was used by the ancient Chinese and the South American Indians chewed the Palo-cota or goitre stick—a piece of seaweed. The development of the use of iodine in goitre, however, was extremely slow, and it remained in the dim background until very recent years.

On the surgical side, the development has also been very largely empirical. Adbul Khalaf Eben Abbas, or Albucasis, probably performed the first extirpation of a goitre in Bagdad in the latter part of the 10th century. Surgery had to await the development of haemostasis, anesthesia and aseptic technique, however, before much progress could be made even in goitrous areas.

In very recent years the beginnings of a foundation have been laid for the basic understanding of the disease process and therefore for its rational treatment. While in the aggregate the work done thus far seems tremendous, we are still a very long way from a complete understanding of the problem.

DeLingeris, in 1906, in Kocher's clinic, showed that a compensatory hypertrophy of the thyroid in dogs could be converted into a colloid, or resting phase, by the administration of iodine. Marine and his co-workers carried this a step further in their brilliant work and Neisser, in 1920, applied the accumulated knowledge, giving iodine to a few exophthalmic patients. He noted a marked improvement.

It remained for Plummer, however, in 1923, to treat a long series of cases with Lugol's Solution and to thereby thoroughly establish the clinical use of iodine in hyperthyroidism. It should not be forgotten, however, that its use in adolescent hypertrophy considerably preceded Plummer's observations.

On the pathological side there is a good deal of confusion. The various classifications of thyroid abnormalities were almost as numerous as the individuals studying them until Aschoff's classification was universally adopted in Europe. This action served to clear the atmosphere considerably and left in the main two schools of thought. They are opposed to each other primarily in the theory of the origin and meaning of the nodular toxic goitres, a type very common in central South Carolina. Aschoff regarded these as true new growths of a benign type, capable of secreting toxic products approximating the normal thyroid secretion and there is much to sustain his view. He named one type of this group "foetal adenoma," signifying his belief that it originated from rests of foetal cells in the thyroid gland. There are several objections to Aschoff's views, on the clinical side, especially, as relates to the behavior of these glands upon administration of iodine.

The opposing school has developed a theory which is very pretty in its application and which in the main has withstood the test of time quite well. It is based upon the changes observed in hypertrophic and hyperplastic thy-

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roids upon the administration of iodine. The idea was born, of course, when DeLingneris recorded his observations in 1906 and it was developed by Marine and his co-workers and finally by Reinhoff.

The thyroid is known to undergo hypertrophy in response to normal physiological demand at various times in the life of each individual. This hypertrophy is often striking at puberty, during gestation, laction and menstruation. In addition, hypertrophy and hyperplasia occur during many serious illnesses and in response to other demands of a more or less physiological type. Marine's work led him to the conclusion that "Goitre is a compensatory, or work hypertrophy of the thyroid gland, depending upon a relative, or absolute, deficiency of iodine." Reinhoff found involutional changes following physiological hypertrophy and hyperplasia "of the new born, after puberty and after pregnancy and lactation." "These involutional changes are, within certain minor variations similar, in all respects, to those of hyperthyroidism."

The hypertrophic and hyperplastic gland contains acini markedly irregular in size and shape and with a greatly diminished colloid content. The involution of such an area results in large acini with a greatly increased colloid content. The former state is the actively secreting one, the latter the "resting" phase, or state of diminished secretion. It has been conclusively shown, I believe, that the administration of iodine is capable of bringing about this change from the over-active to the resting stage.

The hypertrophy and hyperplasia of the thyroid may occur diffusely throughout the gland or it may be confined to one lobe or a part of one lobe. Similarly, the involutional change may be spotted, leaving areas of hypertrophy and hyperplasia unchanged. When this occurs it inevitably results in a nodular change in the gland and it explains why spontaneous remissions as well as the administration of iodine fail to bring the basal metabolic rate down to normal but rather leave the patient simply in a milder hyperthyroid state than before. The hypertrophic and hyperplastic changes may then, and almost always do, recur. It is, unfortunately, an observed clinical fact that after an artificial remission has been produced by iodinization, and been followed by a recurrence of hypertrophy and hyperplasia, the recrudescence either fails to respond to iodine a second time or responds but feebly.

There is in my care now a patient illustrating particularly well the development of a toxic nodular goitre as outlined above. She is a middle aged woman who, twenty years ago, had an episode of nervousness, weakness, and emotional instability coincident with the development of a mass in the thyroid. This was followed by a spontaneous remission lasting fifteen years but during this time she thinks she was, nevertheless, a little more nervous than before her first trouble.

Five years ago her nervousness increased and in the past three years she has had increasing palpitation and dyspnea. There has also been an increase in the size of the gland. The administration of iodine, for several months, resulted in improvement only for a few weeks.

On examination the following pertinent observations were made:—The patient was obese and her hair and skin dry. The brow did not wrinkle on looking up but there were no other eye signs. There was a large nodular mass in the thyroid area, most prominent on the right side, and over this area a soft systolic bruit was heard. The fingers showed a fine tremor. The patient was obviously dyspneic and very emotional, weeping during the examination. The pulse rate was ninety per minute, the blood pressure 135/70. The heart showed no marked abnormality. Her basal metabolic rate was plus 23.

At operation I removed a large, irregularly nodular mass with a preponderance of colloid areas but, here and there, small areas of gland approaching the normal in appearance. Comparatively little tissue could be left. Though her convalescence has been uneventful so far, because of her hypothyroid evidences before operation, I imagine it will be necessary to give her thyroid extract.

The nodulations produced, according to Reinhoff, by involution, are those called adenomata by Aschoff, Hellwig, and others who regard them as true new growths. If the involution of a given area is unusually marked it results in a cystic adenoma, less marked a colloid, or a foetal adenoma, etc. Reinhoff thinks that only

8 per cent of all the nodular goitres he has studied in Baltimore belong to the true new growth group and that 92 per cent represent various involution stages of hypertrophic and hyperplastic glands.

For many years there has been a great deal of controversy about the effect of iodine on adenomatous tumors, the question being hotly debated. In our experience iodine frequently benefits cases with toxic nodular goitres and I have never seen it harm them. If the nodules are involutional in origin one would expect this result. There is at present little evidence to support the idea that new growths, speaking in terms of the involution theorists, are toxic, nor is there much evidence to support the idea that they are made more so by iodine.

Based upon the involutional theory the large majority of goitres seen outside endemic goitrous areas are originally hypertrophic and hyperplastic changes, while a higher per cent are new growths in the recognized goitrous districts. From this we might well conclude that the simple enucleation of what seems to be a cyst adenoma of the gland in the gross, should rarely be done in our section. The preferance should be given to a more radical subtotal thyroidectomy unless there is evidence showing the nodule to be a true new growth of benign type.

Some very interesting ideas have recently been advanced as to the part yeasts and enzymes may play in the production of goitre. McCarrison years ago pointed out that there is a relationship between fecal contamination and goitre. Recently it has been shown that yeasts may have something to do with the production of enzymes which, in a round-about way, increase the demand made upon the thyroid. The presence of iodine in minute amounts in the soil and in the water lessens the multiplication of yeast organisms. The chief source of yeasts are, of course, vegetables grown close to, or in, the soil, such as cabbage, carrots, potatoes, etc., and drinking water.

Clinically, hyperthyroidism varies considerably in its manifestations. From the typical exophthalmic goitre with bulging eyes, flushed skin, rapid pulse, extreme nervousness and hyperactivity, tremor of the fingers, high pulse pressure, and loss in weight, we pass by gradual stages to the type Lahey terms "apathetic." In this individual there is little, or no, exophthalmous, a small firm gland, a relatively slow pulse rate, repose, or even apathy. Thus evidences of hypothyroidism are fairly often seen in company with those of hyperthyroidism, and in the absence of a clearly abnormal gland, these cases may be extremely confusing. Careful observation, with repeated metabolic determinations, usually will clarify the situation.

At the present time I am observing a young woman who, I believe, will fall into Lahey's "apathetic" group. She complains of nervousness and weakness and is unstable emotionally. She presents, nevertheless, a generally apathetic appearance. Her skin is sallow. There is no visible or palpable abnormality of the thyroid, except that it may be a trifle firmer than usual. The eyes are not abnormal nor is the heart, but there is a fine tremor of her fingers and her basal metabolic rate is plus 47. She is being kept under observation. Her basal metabolism will, of course, be repeated at a later date. If it is again found elevated, I feel we would be safe in classifying her as a hyperthyroid case.

As they vary clinically so also may they vary in their reactions to operation. The extremely active hyperthyroid, when operated upon, sometimes has a post-operative thyroid crisis and dies in a state of tremendous activation of all the signs of hyperthyroidism, cardiac, respiratory, motor and mental. The apathetic type may sink gradually into a post-operative stupor and die gently without any of these signs of activation. It is in this last group that the surgeon is most apt to over-step the bounds of safety in his operation, and the medical man most apt to overlook a hyperactive thyroid.

It is these hybrid cases, the failure of an iodine remission to behave as a spontaneous remission does, the failure of iodine to produce a second remission, or to be beneficial over a long period of time, and the unknown part that must be played by contamination, that labels all the theories of goitre as theories only, and not facts.

It would, perhaps, be well to summarize clinical thought and practise:—Iodine given for the first time will produce improvement in 95 per cent of hyperthyroid cases and probably does no harm to adenomata. It rarely, if ever, cures, and its use should therefore be strictly

limited to preparation for operation. Its maximum benefit usually occurs in from 7 to 21 days. The usual dose is 30 to 40 minims daily. Operation should be done at the point of maximum improvement. With iodine the large majority of cases can be done in one stage, but, if the loss in weight has been great, two stages are thereby suggested. The use of sedatives, digitalis, quinidine, the choice of anaesthetic and the post-operative use of iodine must be varied to suit the individual case. The importance of the closest co-operation between the clinician and the surgeon cannot be over emphasized.

It is not necessary to review the surgical technique, but a few details we have found valuable should be mentioned. The use of a basal anaesthetic has greatly improved results in all surgical clinics. It permits us conveniently to give the patient sufficient anaesthetic in his room to alleviate all fear, and, if necessary, to avoid his knowing anything about the operation. In other words, it facilitates "stealing the gland."

Avertin is used with satisfaction in a great many clinics but, after a short trial, we discarded it in favor of amytal and luminal given by mouth. I have never given these drugs intravenously as a basal anaesthetic. Between one and 1 1-2 grs. for every ten pounds of body weight, depending upon the degree of toxicity, is given by mouth two hours before operation. I have not been willing to give over 18 grs. With it is given 1-8 of a grain of morphine, also by mouth. Thirty minutes before operation 1-8 gr. of morphine and 1-150 gr. of atropine are given by hypodermic. On going to the operating room, the patient should be sufficiently "dopey" to notice little, or nothing, but it should not be difficult to arouse him enough to get his attention at least momentarily. Either local anaesthesia or ether are then used during the operation.

Our results with this method have been most satisfactory, though Barbituric acid drugs are thought by some to be contra-indicated in hyperthyroid cases. We have always preceded this administration by a few small doses of the drug, for a night or two, in order to assure ourselves there was no idiosyncrasy.

The recurrent laryngeal nerves will rarely be injured if a shaving of gland is left posteriorly and especially if the shaving is made with the knife cutting laterally away from the trachea instead of toward it. The same can be said of the parathyroids, though I have recently seen a typical parathyroid tetany follow the removal of one lobe without the other lobe having been in any way disturbed. It was subsequently removed at a second stage operation without the recurrence of the tetany.

Though we have not done so, it might be well to use small doses of calcium lactate, preoperatively, and it should not be forgotten that occasionally calcium lactate will aid materially in reducing the pulse rate in a tachy-cardiac intractable to iodine.

From my own experience, I might add that here in South Carolina we are usually dealing with a much less toxic type of patient than are the men in the goitre districts. This should be borne in mind in reading their articles, especially when discussing such matters as the amount of thyroid to be left. I believe that in hypertrophic glands we should leave a little more of the gland than they advise, and that we should be a little more radical in dealing with solitary nodules, not usually being content to remove only the nodule.

DISCUSSION

Dr. George R. Wilkinson, Greenville:

Dr. Doughty has brought out very clearly the difference between goitre that produces an enormous increase in the pulse pressure, the fast pulse and the extreme picture ordinarily seen in goitre areas and the milder type of goitre seen in this section.

That patients with the milder type of goitre have definite episodes in the course of the disease is a point that I want to emphasize. I have in mind a patient who apparently has a worn out goitre. Her basal metabolic rate is low. She has had distinct recurrences over a period of thirty to forty years of what I would consider definite hyperthyroidism. The patient is now in the sixties and there are many reasons why nothing in particular should be done about the gland. Cases of this milder sort of goitre get sick and get better and go along for a long time usually undiagnosticated. When they finally present themselves for treatment, exopthalmos and the bizarre findings associated with hyperthyroidism are not present. The presenting complaint is that of dyspnoea, weakness, general disability, etc., recurring after intervals of good health.

The basal metabolic rate frequently is not increased. However, in many cases in which the metabolic rate

is not excessive the removal of the thyroid gland produces great improvement.

In this section, thyroid disease is much milder than it is described in the voluminous literature from the "goitre belt." For this reason milder goitres are overlooked. From the number of goitres seen in a limited practice, I believe that there are many more nodular goitres in South Carolina than we ordinarily think.

Another point Dr. Doughty made worth emphasizing is that of "stealing" the gland.

Thyroid surgery differs from other surgery in that it is a physiological sort of an affair. The psychological handling of the patient is a definite problem that does not occur in taking out an appendix or taking off a man's leg. The doctor wants to get the idea of operation entirely out of the mind of the patient, when and where the gland is to be removed. Such a state of mind spares the patient an enormous amount of worry which is a consideration of no little moment for these people who have had goitre for a long time and fear the knife.

In my opinion it is much wiser to have a suspicious gland taken out than to leave even a questionable gland in the neck. The cumulative damage to the cardiac mechanism from the milder type of goitre is hard to show until functional impairment occurs, which is a result the careful clinician should seek to forestall by a timely diagnosis.

Dr. L. H. McCalla, Greenville:

Dr. Doughty has made a classical presentation of this subject. Would like to say just a few words about it, for there is nothing in my experience in surgery that has given me more satisfaction than dealing with goitres.

It is interesting how surgery of the thyroid gland has developed. We accepted antisepsis about 1890 in this country; and the surgical treatment of thyroid diseases has progressed accordingly, developed mainly by Crile, Halstead and C. H. Mayo. It is very fitting that this subject should be presented at this time, when Dr. Crile is to be our guest speaker. His work along this line of adopting combined anesthesia and his sharp dissection, avoiding trauma, preventing post operative crises is greatly responsible for the advances made in goitre surgery. Just a few years ago as a medical student, goitre operation was considered just about the worst thing that could happen; but now, with the administration of iodine, selecting the proper anesthetic, and such things, it has been made a very safe proceedure. Lots of times we see patients whose doctors have told them to let their goitre alone, that it is a bad thing to fool with, that it will kill them to have it interferred with, and those things. But those prejudices have been gradually overcome, and the mortality in goitre operations has been reduced to one per cent, or less in some of the large clinics.

I enjoyed Dr. Doughty's paper very much.

Dr. George T. Tyler, Jr., Greenville:

There are just one or two things I want to say in regard to this excellent paper. Other methods have been used for the removal of nodular toxic goitre, but there is only one way to get it out, and that is by surgical removal. I thing it is hardly necessary for me to repeat the very great importance of not using iodine on these cases until operation is decided upon. If one of these thyroids is quiet—when I say "quiet" I mean the patient getting along well, having no symptoms—if you use iodine the chances are that you will light up that process and the patient then will have evidences of hyperthyroidism.

I think the idea of taking out too much of the gland sometimes frightens us; but when we see so many cases of heart disease, for instance, in which the whole thyroid gland is removed and the resulting deficiency is replaced by the administration of thyroid extract, it ought not to alarm us that there may be too much tissue removed when these patients are subjected to operation.

Now, as to the question of whether patients having a mild degree of hyperthyroidism should be operated on, my feeling is that those patients should be studied and not rushed to operation. Then, if operation is decided upon, it should be done. They should certainly not be put in a class of which it is said, "These patients should not be operated upon." They should be observed for weeks or months, and then the decision made as to whether or not an operation should be performed.

Dr. C. B. Epps, Sumter:

I would like to say a few words on two points. The first is whether to keep your patient in the hospital a while and give him a little ether one morning and a little bit the next morning, maybe, and do what you call "stealing" the thyroid. I think nature has endowed us all with a certain reserve of energy so that when we decide to do a thing we are braced up for it, and the quicker we can get through with it the better. I think we would rather see a man coming towards us with a knife than have him sneaking up behind us with a knife. I think the sooner we can get through with it, the better for the patient. I think the only excuse for long hospitalization preoperatively is to get your patient prepared physically for the operation. I prefer to tell my patients when I am going to operate on them; then you do not have to "steal" the gland away. I give my patient avertin, giving it in his room. Then when he wakes up the thyroid is out.

I consider thyroid operation, carefully done, one of the safest kinds of surgery. I have never had a serious postoperative hemorrhage or a serious infection after it. I did my first thyroid twenty years ago, and I have done at least as much thyroid surgery as the average general surgeon. In that time I have lost one case, a case that died on the fourth day. That case had a myocarditis. I have never had a case of loss of voice. Anyway, most of those operated on

are women, and the loss of voice would be temporary, anyway. I think we have built up the idea too much that thyroid surgery is such a terrible form of surgery.

I thank you.

Dr. Wm. H. Prioleau, Charleston:

I should like to make just one remark. The question is frequently asked, how much thyroid tissue should be removed, or is it safe to remove a large amount? My answer is this: —In cases of hyperthyroidism—barring total thyroidectomy—too much gland cannot be removed; regardless of whether it is the exophthalmic type or the nodular goitre, the best plan is to remove as much of the glandular tissue as we safely can. By "safely" I mean with due respect to the safety of the recurrent laryngeal nerves and the parathyroid bodies. This leaves a small strip of thyroid tissue on each side of the trachea. The question is, is this sufficient? The answer is no, not for the time being. But within the period of a few months, in almost every case, the two small strips of glandular tissue will increase in size sufficiently to give the patient a normal thyroid balance. The danger in thyroid surgery is incomplete operation; and I would say that, conservatively, eight or nine out of ten so-called recurrences are not recurrences at all but are due to incomplete operation. While not infrequently we do have thyroid deficiency after operation, it occurs early and is transient. It generally portends a good result. However there is an occasional case of permanent deficiency—this condition is easily corrected by thyroid medication by mouth.

Dr. Doughty, closing the discussion:

I have not very much to add but simply wish to say that I appreciate very much the discussion and I hope the paper has given those of us who are in general practice something on which to hang the idea as to how iodine should be used.

Dr. Epps, I should like to add this. Most of the patients in South Carolina with hyperthyroidism or toxic nodular goitre or any other type of goitre can be operated on without "stealing" the gland. But with those patients who are really extremely toxic, if anybody is coming to them with a knife, even if it is in front of them, they react just as you would with a knife behind you, and those glands have to be taken out, if it is to be done with safety, under a basal anesthetic. I think few of us now advocate the idea of using ether one morning and varying the breakfast the next and that sort of thing, before really operating.

I have the greatest respect for avertin, but for thyroid surgery I prefer to use luminal or amytal, because of its better effect on the patient.

Many of these people are extremely toxic, and if you tell them when you are going to do the operation you will not do it that day; you will do it another time.

ANDERSON COUNTY MEDICAL SOCIETY MEETING

The regular monthly meeting of the Anderson county Medical Society was held at the John C. Calhoun Hotel on Wednesday, October 14, 1936, at noon.

Dr. James A. Hayne and Dr. G. E. McDaniel of the State Board of Health were present and discussed the problem of veneral diseases and their control.

Dr. Hayne presented numerous charts in his discourse, emphasizing the role syphilis plays in the U. S. and results that can be expected if proper treatment is administered. He stated this was a nation wide program and was not limited to S. C. A Cooperative Clinic Group has been appointed to determine the best methods of treatment.

The State Board of Health is mainly supporting the Educational Program and helping to secure government aid. It desires the actual routine work to be handled by the county societies. Each county is to appoint a Syphilis Committee to investigate local conditions and make recommendations. This report is to include what should be done in the county and what plan is best suited for local needs.

The following doctors were appointed to serve on the committee for Anderson County: H. M. Daniel (Chairman), J. M. Feder, Frank Wrenn, Goodman Bare, and J. W. Martin.

Dr. E. A. Hines of Seneca, S. C., was also one of our distinguished guests. He reported plans were well under way for the State Medical Meeting to be held in Columbia next April. Dr. Morris Fishbein of Chicago, editor of the J.A.M.A., and Dr. Cannon, a dermatologist of New York, have been secured as speakers. Dr. Hines also stated a committee was now at work making an investigation of the Hospital Service Plan. North Carolina has tried out the plan under the backing of the Duke Foundation. The problem in S. C. at present is how to put a plan in use without money. He has high hopes that the Duke Foundation will also sponsor S. C.

The meeting was thrown open for discussion and Dr. Hayne answered many questions that had not been answered in his regular talk.

There were 26 members and 4 visitors present for the meeting.

After the discussions had ended, the group adjourned and gathered in the hotel dining room, where luncheon was served.

Herbert Blake, M.D.,
Secretary.

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DECEMBER, 1936

THE MEDICAL COLLEGE

The Medical College now has an attendance of 174 medical students, 25 pharmacy students, and 101 nurses, a total of 300 students.

It is well known that in recent years entrance requirements for medical schools have become somewhat more stringent with undoubted improvement in the type of student who enters school and the type of medical graduate. Applications in all medical schools exceed the number which any school can accommodate and our own medical college is no exception to this situation. There were 590 applications for this year's freshman class, which now consists of 42 members. The applicants were classified as follows:

Qualified from South Carolina	128
Qualified from out of state	136
Probably qualified from out of state	226
Total Qualified	364

This means that there were 76 applicants from South Carolina who presented the necessary scholastic qualification but were not accepted. Obviously the school with limited funds, equipment, and personnel can handle properly only a certain number of students and indeed it is desirable from all standpoints that classes be small and well instructed rather than large and superficially taught.

The Committee on Entrance, of which Dr. O'Driscoll is chairman, has had many difficult decisions to make in determining which of the numerous applicants were best suited for the study of medicine. Acceptance has been made on the basis of the now rather generally used aptitude tests and as far as possible by personal interview. In not a few instances the committee has been subjected to considerable pressure which aims to secure admission of students whom the committee had not thought desirable.

The freshman acceptances were made very early and the class was practically complete by the end of the last session. It now includes 42 South Carolina students who have seemed to an unprejudiced committee to be the most promising material from which the profession of the state will be largely recruited in the future.

Using the newer tests for aptitude, examiners find that not infrequently the men who have more comprehensive credits are later less proficient in medical studies than some of the men who have spent a shorter time in academic college. This observation does not depreciate the value of an academic degree, for it is only reasonable to suppose that the men who show more aptitude would exhibit even higher performance had they completed more preliminary academic work.

J. I. W.

THE UROLOGICAL ASSOCIATION OF SOUTH CAROLINA

DOUBLE URETERAL TRANSPLANT—CASE REPORT

By J. McMahan Davis, M.D., Columbia, S. C.

Young woman, 23 years of age, entered the Columbia Hospital April 25, 1933, complaining of frequency and pain over bladder region. Finds it necessary to void every few minutes and she is unable to sleep at night due to this frequency.

About two years ago the patient noted that her bladder capacity was not up to normal and it caused great pain when she was forced by circumstances to refrain from emptying the bladder for a great length of time. The frequency increased and the capacity diminished until the past few weeks have been a torture to her.

Her past history was essentially negative and physical examination showed no pathology save a tendency toward obesity. Blood picture and urinalysis were normal. Wassermann negative. Cystoscopic examination, under spinal anesthesia, showed an irritable bladder with about sixty cc. capacity. A definite area of submucous cystitis was visible, which reached a length of three to four inches when bladder was forcibly dilated. This area was thoroughly fulgurated and relief was immediate. Following this the bladder was dilated systematically, and at the end of a few weeks the capacity had increased to 225 cc. Cystoscopy at this time showed no involved areas that had not been reached by the fulgurating electrode. An acute pyelitis developed after these dilatations but subsided in four or five days.

The patient was told that the relief would not be permanent and fulguration would be necessary in from three months to two years.

She returned one year later, May 1934, when area was again fulgurated. Relief was not of long duration and she returned for another treatment. At this time Pyelograms were made and a guinea pig was inoculated in an effort to connect a tuberculous process with the sub mucous cystitis. Both of these tests were negative and the patient was again fulgurated.

She next returned in June, 1935, and was fulgurated. Later she returned for another urological examination and no tuberculosis was found. At this time intravenous urography showed dilation of ureters, though this was not marked. Patient was now advised to have a ureteral transplant. She left the hospital to return later for this.

Patient returned to the hospital February 7, 1936, and gave full consent to have the operation. She was given a complete examination and re-check. On February 21st patient was operated upon under spinal anesthesia and a double ureteral transplant done as follows: mid-line incision into the peritoneal cavity, intestines walled off and pelvic area clearly exposed. Both ureters were located and, after incision of peritoneum over them, they were mobilized for about six inches of their length. The lower sigmoid was brought in apposition to each ureter and the site for anastomosis selected. Incision was made in the striae of the intestine through the serosa and muscular coat and the mucosa separated for a half inch on each side of the incision. A linen suture was then passed into the lumen of the ureter and out again; this suture was continued through the mucosa into the lumen of the intestine, was passed through a ring which was previously introduced into the intestine through the rectum and the suture was then continued out of the mucosa into the operative field. This suture was then tied tightly to exert its crushing effect. The ureter was then buried into the wall of the intestine by the apposition of the muscular coat and serosa over it. This process was repeated for the other ureter. The wound was then closed with the usual closure. To insure sloughing a string was attached to each ring before insertion into the rectum and end of string left protruding outside. This would allow the exertion of pressure should it become necessary.

Two days later patient thought she passed urine through the rectum. On the third day one ring with its crushing suture passed and on the fourth day the other ring was expelled.

Methelyn blue was excreted in a watery stool and apparently the greater part of the urine was expelled by rectum.

Convalescence was not smooth, but was not unduly alarming, and, when the patient left the hospital she was comfortable at all times and voided only a small amount of urine every three or four hours, the remainder being expelled through the bowel. Three months later the patient was still comfortable.

It will be noted that the ureters were allowed to continue drainage into the bladder as it was not annoying to the patient and we felt that it was an additional safety measure.

CONCLUSIONS

Although the presence of dilated ureters kept this from being an ideal case for ureteral transplant, the result has been excellent. And, while the operation must be thought of and classed as a major operative procedure, it is by no means a forbidding one. Its development gives us a method of relief for those who have incurable bladder involvement, whether malignant or otherwise.

It is generally conceded that bladder tumors metastasize later and invade the surrounding tissues slowly; and that death usually comes from intercurrent renal infection rather than from the malignancy itself. This being true, does not a ureteral transplant with subsequent removal of the bladder offer the best solution for this problem?

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

TREATMENT OF ATROPHY OF THE OPTIC NERVE

Prof. H. Lauber

Arch. Opthal., Oct. 1936, pg. 555

The treatment of atrophy of the optic nerve is approached by Prof. Lauber frim an entirely new angle, but one from which to claim results. I try to make anatomy and physiology the foundation of my teaching, not to simply pronounce that such is the case, or such a treatfent should be used, but by relating it in each case to the anatomy and physiology, show why it should occur or be so. Prof. Lauber discusses optic atrophy to a greater extent from the point of view of its occurrence in tabes. In which disease he says that the general arterial pressure, especially the diastolic, is low. This influences the blood pressure in the retina, which is normally, systolic 70-80 mm.; diastolic 40-56 mm. "Therefore, the lowest level of the vascular tension in the retina lies 14 mm. above the highest level of the normal intra-ocular tension (26 mm.)."

This is the necessary condition for normal circulation in the capillaries of the retina. If the relation between the intra-ocular tension and the arterial pressure is diminished, there is resulting disturbance of the capillary circulation, the normal level of which lies between 33 mm. diastolic pressure, and 55 mm. (systolic pressure.).

The rise in the intraocular tension in glaucoma reduces the difference between intraocular tension and the capillary blood pressure; the intraocular pressure in some cases rises above the level of the intraocular diastolic blood pressure, thus slowing down or totally obstructing the capillary circulation.

Since the retinal tissues are, as all central nervous system tissues, especially sensitive to lack of oxygen, a marked diminution in retinal function results.

A high blood pressure is therefore beneficial for cases of glaucoma.

A high blood pressure in tabes is a good sign.

A low diastolic retinal arterial pressure with a low intraocular pressure tension is O.K.

The blood pressure in tabes is very liable, it often drops from unusual causes, causing a consequent dimunition between the intraocular blood pressure and intraocular tension, producing diminished vision.

So one must either raise the general blood pressure, which cannot be easily done, or lower the intraocular tension or both.

The blood pressure in tabes may appear low periodically; this explains the reason for the variations in the vision in tabes.

Discard the iodides, mercury and arsphenamines with lowered blood pressure; diminish the intraocular by pilocarpine or operation; and raise the general blood pressure by strychnine injections.

First raise the general blood pressure by injections of strychnine and appropriate diet. (Later hormonal treatment, and lower intraocular tension by 2 per cent pilocarpine solution or operation—cyclodialysis). Then use treatment with neoarsphenamine.

There is a parallelism between the rise of retinal arterial pressure and the fall of intraocular tension. Treatment of syphilis is injurious to the retina if administered during a period of low blood pressure, as is shown by case reports; but if the blood pressure is first brought up (to normal) the treatment can then be given without harm to the vision. "If, however, the blood pressure is kept high or the intraocular is kept low, this noxious influence of the treatment for syphilis does not appear." "Mercury, iodides, arsphenamine and other combinations of arsenic and bismuth and malarial therapy," can be given without harm, "as long as the vascular pressure is not low or is not lowered." Examine for contra dilatations as the cause of low blood pressure.

Essentially, the cases of tabetic atrophy of the optic nerve do not differ in principle from cases of glaucoma. In both groups the normal relation between the intraocular tension and blood pressure is altered, the difference between the two being diminished.

The essential factor in the treatment of tabetic atrophy is to reduce not only the intraocular tension by trephining, sclerotomy, or repeated punctures but to also raise or keep up the blood pressure.

In prevention of tabetic atrophy do not treat by certain medication in the period of low blood pressure.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 319 (31913)

Case of Dr. W. A. Smith

May 1, 1936

Student Gregg (reading):

A white man, age 54 years, admitted to Roper 1-29-36, discharged 1-31-36. Admitted to Pinehaven 1-31-36, died 4-2-36.

History: Patient was perfectly well in Sept. 1935, although he had apparently had some illness during the summer of 1935, for which he was advised to have his teeth extracted. He had several removed. In Sept. was seized with sudden sharp pain in left side. No cough or fever at this time. He returned to his dentist for further tooth extractions and was advised to see a physician. At this time he had a temp. of 102, and fever persisted for about 5-6 weeks. During this time the appetite was good, and there was no cough or night sweats. After the fever subsided, the patient continued to have his teeth extracted. Afternoon weakness developed while doing work as a clerk, and frequently he was unable to finish out the day's work. On Jan. 21, 1936, he felt very badly and went home. That night he had a severe coughing spell, and thick, tenacious, slate-colored sputum was expectorated. Frequent night sweats for several weeks before hospital admission. Questionable weight loss. No direct exposure to tbc.

Exam.: A somewhat emaciated man, temp. 99, pulse 84, resp. 20, BP 110/70. Only 5 teeth remain, these carious; gums are ulcerated. Pharynx normal. Anterior cervical lymph glands enlarged. Chest: Expansion slightly diminshed on right, some retraction of upper portion of right chest. Tactile fremitus greater on right. Some impaired resonance over upper portion of right chest anteriorly and posteriorly. Fine and medium rales over right

chest anteriorly down to 4th rib. Bronchial breathing (?) over 2nd rib in right midclavicular line. Heart: not apparently enlarged, sounds of good quality, no murmurs. Pulsation in 2nd interspace just to right of sternum. Radial arteries normal. Remainder of examination negative.

Lab: Urine (2 exams) completely neg. Blood (1-29; 2-2; 3-26; 3-28; 4-1): Hb. 76; -; 73; 69; 65(D). RBC -; 5,410,000; -, -, -. WBC 9,600; 13,750; -; 16,250; 51,000. Polys 61 per cent; 84; -; 84; 1. Blood Kolmer and Kline tests neg. Sputum (6 specimens): leukocytes 3-4 plus; no t.b.; mixed organisms 2 plus; Culture for t.b. and higher fungi neg. Pleural fluid cultured: (3-25) neg.; (4-2) neg. for higher fungi. Guinea pig alive and well 4 weeks after inoculation. Feces for ova and parasites, neg. X-ray of chest (1-29; 2-25; 3-21): See chart. Mantoux strongly positive (2-25).

Course: Temp. almost constantly above 99 for first week, varied between 98 and 99 for next two weeks. From then until death showed daily afternoon rise, about 9-101, with fall during the night to about 99. Pulse 80-140, following temp. curve closely. Pneumothorax begun on right side on 2-3-36, which, by successive refills, amounted to a 50 per cent collapse on 2-9. A small amount of fluid was noted in the right chest on 2-10. After feeling fairly well for several weeks, on 3-24 patient began to complain of pain in right chest, worse on deep breathing. On 3-25, 1000 cc. of blood-tinged fluid was aspirated. (Pleural fluid showed polys predominating, few RBC). On 3-26 chest was aspirated again, almost undiluted blood being obtained. On 3-27 aspiration in 7th interspace showed clotted blood and "needle felt as if it were entering almost solid lung." Aspiration in 5th interspace gave 200 cc. of clear fluid. On 4-1, foul pus was obtained on aspiration. Became semicomatose and died on 4-2-36 at 1:40 P.M.

Dr. W. A. Smith (conducting): I first saw this patient about ten years ago. At that time he had a rather sudden attack of pleurisy, for which I treated him, but he left my care before a definite diagnosis was made, his symptoms having cleared up meanwhile. Then he was admitted to the Roper Hospital, as recorded on the abstract. This x-ray was made then. Mr. Able, will you interpret this film?

Student Able: There is a markedly increased density in the middle lobe and apex of the right lung, and there is a questionable cavity in the region of the right hilus.

Dr. Smith: Yes, and the diaphragm on that side is very irregular, and the right costo-phrenic sinus is somewhat obliterated, suggesting the accumulation of fluid there. Now on the basis of the history and this x-ray what diagnoses would you consider?

Student Able: Pulmonary tuberculosis seems the most likely.

Dr. Smith: Yes. His first blood count at Pinehaven showed 13,750 white cells with 84 per cent polymorphonuclears. This seemed to us to suggest the so-called "septic type" of tuberculosis, and pneumothorax was begun. His sputum had been persistently negative, however. Now, Mr. Baker, interpret this x-ray, taken after he had been in Pinehaven about a month.

Student Baker: The upper portion of the right lung appears collapsed, and the absence of lung markings indicates pneumothorax. The lower lobe is very dense and only slightly collapsed.

Dr. Smith: Yes, and there is a small amount of fluid in the pleural cavity.

His pneumothorax was continued, and his temperature came down and he felt generally better. Then he had a sudden pain in the right side. This type of pain is not uncommon in pneumothorax patients, and it is usually due to a pleurisy. Somewhat later, the chest was aspirated, and 1000 cc. of a slightly blood-tinged but otherwise clear fluid was obtained. In the meantime, no tubercle bacilli could be found in repeated examinations of ordinary specimens of sputum, or in specimens which had been concentrated. A guinea pig was inoculated with the concentrate from some of the pleural fluid, and this also had negative results.

In view of his extensive pulmonary lesion and the absolute failure to find evidence of tuberculosis by these various methods, we then felt that we could rule out tuberculosis. What other diagnosis would you consider then, Mr. Baldwin?

Student Baldwin: Carcinoma of the lung and gangrene of the lung must be considered.

Dr. Smith: What do you think, Mr. Bernstein?

Student Bernstein: Abscess of the lung must also be considered.

Dr. Smith: Mr. Booker, how about syphilis of the lung?

Student Booker: There is no history of syphilis, and the blood Kolmer and Kline tests were negative. I believe that we can rule out syphilis on those two counts, altho the x-ray is somewhat suspicious. Fungus infection must also be considered, but that seems to be pretty well ruled out by the persistently negative cultures and sputum examinations.

Dr. Smith: Yes, we felt that we had ruled out fungus infection; that was another diagnosis to be considered. Now, Mr. Bethea, this last x-ray was made on March 21st. How would you interpret it?

Student Bethea: It looks like a pleural effusion, but it also looks like a hydro-pneumothorax.

Dr. Smith: Mr. Wallace, why don't you think this is a hydro-pneumothorax?

Student Wallace: There should be a horizontal fluid level if it were a hydro-pneumothorax.

Dr. Smith: Yes, that's right. Now after this film was taken, the chest was aspirated again, and foul-smelling pus was obtained. Mr. Harrison, how would you trace the course of events in the case?

Student Harrison: Considering the man's age and the course as outlined, I am rather inclined towards the diagnosis of carcinoma of the lung, which later became secondarily infected. I believe that tuberculosis and fungus infection are satisfactorily ruled out.

Dr. Smith: Mr. Pendino?

Student Pendino: I believe that it was a carcinoma of the bronchus, which infiltrated the lung and pleura and then became infected, so that an acute empyema was the final outcome. The fact that the original pleural fluid was blood tinged seems to be of some significance in the face of a possible diagnosis of carcinoma.

Dr. Smith: Mr. Bernstein, didn't you make the diagnosis of pulmonary abscess?

Student Bernstein: Yes, sir. We have a history of dental infection, with extraction, and that is a very common history in cases of lung abscess. The physical findings, blood count and negative laboratory data rather bear out that diagnisis. In the x-ray picture, however, there is no definitely circumscribed abscess, but more of a consolidation, and I believe that we can rule out abscess of the lung.

Student Baldwin: The pulling of infected teeth could easily give rise to a pulmonary embolism, with gangrene developing there.

Student Harrison: Doesn't gangrene give a very foul odor to the breath?

Dr. Smith: This man's breath had a foul odor late in the course of his illness. If this case were one of gangrene from the beginning, he would not have lived nearly as long as he did, though. If his condition terminally was gangrene, it was superimposed on some other condition.

Dr. Smith: Mr. Elders, what may have happened during the course of his acute pleurisy that caused him to become rapidly worse?

Student Elders: I believe that his pleural cavity was probably already infected at that time. The rubbing together of the roughened pleural surfaces could have caused the pain.

Dr. Smith: This is aside the case, but we do not now believe that pain in pleurisy is due to the rubbing together of the inflamed pleural surfaces. If so, we could always relieve the pain by pneumothorax. Too, we frequently hear friction rubs, which surely indicate the rubbing together of inflamed surfaces, without there being any pain.

Mr. Goodlett, what do you have to say about the case?

Student Goodlett: No one has commented on the pulsation to one side of the mid-line. I suppose that that is of no importance, but the possibility of an aneurysm must also be considered.

Student Quantz: I have read that pain in carcinoma of the lung remains constant after it first appears. If that is true, its disappearance in this case would seem to be against the diagnosis of carcinoma.

Dr. Robert Wilson, Jr.: Were the fingers or toes clubbed?

Student Gregg: No, they were not.

Dr. Smith: When this man went to autopsy, we thought that he had a primary carcinoma of the lung, with secondary infection and ab-

scess formation, followed by pyo-pneumothorax. We thought that a spontaneous pneumothorax had probably occurred at the time when his pain became severe, after which he rapidly became worse. Spontaneous pneumothorax is not uncommon in patients who have an artificial pneumothorax, and frequently it gives rise to a serious outcome. Here we thought that the pyo-pneumothorax resulted from the spontaneous pneumothorax.

Dr. Lynch: Mr. Gasner, suppose someone told you that this man also had a nodular enlargement of the testicle. How would that have affected your diagnosis?

Student Gasner: I would think pretty strongly of carcinoma of the testicle, with metastasis to the lung.

Dr. Lynch: Well, this man had an enlarged testicle, and when it was noted externally at the time of autopsy I imagine it caused a little trepidation among the clinicians present. It turned out to be a varicocele, however.

Here we have the right lung (showing autopsy specimens), in the pleural sac of which there was a large, foul purulent exudate. This odor was doubtless due to infection by an anerobic organism. The lung is adherent to the parietal pleura in the axillary line, and there is a sinus tract which caused the abscess cavity to communicate with the pleural cavity. This sinus was brought about either by spontaneous rupture of the pleura (a spontaneous pneumothorax) or by puncture of the lung during aspiration of the chest. Pyothorax then developed by infection of the pleural fluid already present.

At the time of autopsy, Dr. Peery believed that it was a case of carcinoma of the lung, because the lung tissue about the abscessed area was so solid. The bronchus communicated with the abscess cavity, and about this portion of the abscess wall the tissue seemed to fungate. It was not a carcinoma, however, as microscopic examination showed that the condition was a simple chronic abscess of the lung.

Let's look at this first x-ray again. Here you see a cavity surrounded by an area of irregular consolidation. That is the common x-ray appearance in abscess of the lung, in spite of Mr. Bernstein's opinion to the contrary. Of course such an appearance can be gotten in other conditions than abscess, but with a film like this one, abscess should certainly be seriously considered. Perhaps we can learn an x-ray lesson from that.

And from the record, I believe that we have a logical background for the development of an abscess of the lung. We know that suppurative disease of the lung not infrequently follows operative proceedures upon the upper respiratory tract or the mouth, and as more and more autopsies are being done now, this is much more generally recognized than it was a few years ago. Under such circumstances, abscess may occur either by embolism or by aspiration of foreign material. To pathologists, the latter seems a much more likely explanation, although there are many who differ with this opinion. Foreign material can be so easily aspirated when the individual is under anesthesia, with the cough reflex abolished (and most of the cases occur after a general anesthesia), and after the foreign matter has plugged a bronchus and secretions have accumulated, infection is so easy that it is easy to understand this process. On the other side of the question, men believe that organisms are set free into the blood stream by pulling infected teeth, etc., and these emboli would naturally lodge in the lungs and produce abscesses. If this means of infection is true, though, it is very difficult to explain why the incidence of abscesses is higher under general anesthesia than under local, why operations upon infections in the arm or leg are so seldom followed by pulmonary abscess, and why the lung abscesses are so generally unilateral, with the right lower lobe (whose bronchus is almost straight and would permit easy aspiration) the commonest location of the disease.

The saprophytic, gas-forming organisms are the usual causative agents, and frequently the presence of these organisms will cause a gangrene of the lung. This may be either gangrene from the beginning, or a gangrenous infection may occur in a simple chronic abscess.

Student Booker: Dr. Lynch, do you believe that this condition was present for ten years? Dr. Smith tells us that this man had his first attack of pleurisy ten years ago.

Dr. Lynch: No, I do not believe that the abscess had been present that long. I think the abscess followed the extraction of the teeth

in the summer and fall of 1935. The previous pleurisy was probably tuberculous in origin; there was an old apical scar of healed tuberculosis on the left side.

Dr. Smith: I believe that bronchoscopy or the study of x-rays made after the introduction of an opaque medium into the bronchus, might have permitted us to make the correct diagnosis in this case. Still, it would have been very hard to rule out the possibility of primary carcinoma of the lung, which is so frequently followed by abscess and empyema.

Pneumothorax is used by some individuals in the treatment of abscess of the lung, but if I had made the correct diagnosis in this case I know that I would not have used it. I believe that pneumothorax distorts the bronchus enough to inhibit free drainage from the abscess, and, by tending to diminish the amount of air in the affected area, permits the anerobic organisms to grow more readily.

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BOARD MEETING

The Board of the Auxiliary to the South Carolina Medical Association met in Rock Hill, November 5, 1936, at Winthrop College with seventeen members present.

The resignation of Mrs. W. F. Strait, State President, was regretfully accepted, and Mrs. T. R. W. Wilson, First Vice-President, Greenville, S. C., was appointed to the office of president. Mrs. A. Izard Josey, Columbia, S. C., was elected First Vice-President.

After the business session the Board was entertained at a delightful luncheon by the members on the Board from Rock Hill.

Mrs. I. Jenkins Mikell,
Press & Publicity Chairman.

MEDICAL AUXILIARY OF PICKENS COUNTY MEETS

The Pickens County Medical Auxiliary held its October meeting at the home of Mrs. J. L. Bolt with Mrs. A. M. Tripp as co-hostess, Mrs. Bolt, the President, called the meeting to order and the opening devotional was given by Mrs. Byrd Lewis. "A Sure Heaven" by Annie Johnson Flint, was read by Mrs. J. L. Valley. A prayer was offered by Mrs. S. E. Potts.

Following a brief business session Mrs. Bolt presented Mrs. T. R. W. Wilson and Mrs. L. O. Mauldin of Greenville. Mrs. Wilson, who is Vice President of the State Medical Auxiliary, talked on "State Activities." Mrs. Mauldin discussed "Student Loan Funds."

Mrs. L. R. Poole presented Miss Ruth Haines, who sang "O'l Car'lina." She was accompanied at the piano by Miss Harriet Martin.

Other out of town guests present were Mrs. Florence Porter of Houston, Texas, and Miss Jervey of Charleston.

The hostesses served a delicious salad course with coffee, nuts, and individual pumpkin pies.

MEDICAL AUXILIARY NOW INCLUDES COUNTY

The Woman's Medical Auxiliary of Rock Hill met the first time as the York County Medical Auxiliary, announcement being made during the business session of the broadening of the organization to include the wives of all the doctors in the county.

Mrs. Frank Strait, state president of the medical auxiliary, was gracious hostess to the meeting at which this important step was taken, at her home on Park Drive.

The apartments in which 16 members were received for the transaction of other important business matters and for the hearing of a most instructive talk by Dr. E. E. Herlong, one of the physicians of the city, was lovely with colorful arrangements of fall flowers.

Mrs. I. A. Bigger, secretary, read a most interesting and comprehensive president's report.

Up for reconsideration was one of the most important phases of the auxiliary's work, that of the student loan fund. Mrs. J. R. Miller, president, reported on the local work of the committee, while Mrs. W. W. Fennell spoke of the aims of the entire state organization. Genuine interest centered in the announcement that Robert Moore, son of the late Dr. R. L. Moore, was the present benefactor of the loan. Mr. Moore, whose home was in Rock Hill until several years ago, entered the freshman class of the Medical College of South Carolina at Charleston at the beginning of the present session. The York County Auxiliary pledged continuance of support of this work.

Following the announcement of county affiliation, Mrs. Miller cordially welcomed Mrs. J. G. Barron and Mrs. W. B. Jones, wives of York doctors, and Mrs. J. R. McGill, wife of a Sharon physician. Mrs. Barron invited the auxiliary to meet in York in December, the exact date of the meeting to be announced later.

Concluding business matters, an announcement was made of the addition of a small amount to the dues in order to defray expenses of the state organization. Mrs. W. R. Blackmon, treasurer, collected the 1936-37 dues.

For the afternoon's program, Dr. E. E. Herlong gave a most informative illustrated lecture on "Infections of the Kidneys." Mrs. Strait in behalf of the auxiliary expressed sincere appreciation to Dr. Herlong for this program and to the other doctors who cooperate in giving the auxiliary its fine educational programs.

During the social hour which followed, Mrs. Strait served a delicious two course refreshment menu—salad followed by coffee and cake.

INTERNAL MEDICINE

J. H. CANNON, M. D., CHARLESTON, S. C.

MASS PRODUCTION SYPHILOPHOBIA

By George R. Wilkinson, M. D.,
Greenville, S. C.

An Inevitable By-Product of the War on Syphilis

Human beings, having not evolved very far beyond their jungle ways and attitudes, are guided, not by reason, but by fear. Consequently it is to be expected, that, as the press, the radio, and other agencies, reach their stride in the publicizing of syphilis in the campaign for its control, the doctors will be deluged by otherwise normal people who have developed acute syphilophobias as they have begun to digest their fragmentary knowledge of the disease. Indeed it is to be expected that the first wave of casualties will not be those who have been wounded by the disease but those who have developed a campaign neurosis.

In the vast majority of these cases, the history taking, physical examination, and serological studies will give negative results. Nevertheless it will require all the tact and ingenuity that a physician possesses to reassure a large proportion of these people that, they do not have syphilis, have not had syphilis, and are not likely to have the disease. The negative Wassermann will not be sufficient for they will be told in the press that syphilis is a dread occult disease and even the miraculous and marvelous Wassermann does not always rule it out.

Consequently it behooves all of us not only to prepare to treat the increasing number of syphilitics who will be coming to us but also, to formulate some tentative approach by which we will be able to deal with an inevitable large group of syphilophobic non-syphilitic patients.

SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

Cartilaginous growth, by A. E. Baker, Charleston. South. Med. & Surg. 98: 269, May, 1936.

A case report with discussion of the pathology.

"Healed" dissecting aneurysm of the aorta, by T. M. Peery, Charleston. Arch. Path. 21: 647, May, 1936.

A case report with autopsy findings. The patient survived fifteen and a half months after the dissection. Illustrated.

A state-wide investigation of hookworm in South Carolina, by W. S. Leathers, A. E. Keller & B. F. Wyman, (Columbia.) Am. J. Hyg. 23: 600, May, 1936.

The authors find a decrease of 33.5 per cent in the incidence of hookworm infestation in the past 20 years. The decrease was greatest in the western part of the state. Incidence varies with age from 12.9 to 32.4 per cent. The reduction has been less in this than in other states, and no concerted efforts have been made by official health agencies to improve the situation. An adequate program should include treatment, excreta disposal, and education.

Ischemic necrosis from ice bag "burn," by G. H. Bunch, Columbia. Am. J. Surg. 32: 519, June, 1936.

Discussion of the way in which cold causes local necrosis and explanation of the proper application of an ice bag.

Acute laryngeal stenosis in children, by E. W. Carpenter, Greenville. South. Med. & Surg. 98: 423, August, 1936.

Report of a series of cases with discussion of the relative merits of intubation and tracheotomy.

Cardiovascular syphilis, by T. R. Littlejohn, Sumter. South. Med. & Surg. 98: 314, June, 1936.

A short review of the subject.

A simple approach to the diagnosis of hyperinsulinism; report of 50 cases, by G. R. Wilkinson & E. B. Poole, Greenville. South Med. & Surg. 98: 465, September, 1936.

Outline of a method for finding the hypoglycemic patient, and for prescribing a satisfactory dietetic treatment.

After body, soul and spirit—what? by I. S. Barksdale, Greenville, South. Med. & Surg. 98: 471, September, 1936.

Echo answers,—What? A philosophical and theological discussion.

Characteristics of small colony variants with special reference to shigella paradysenteriae sonne, by B. D. Chinn, Charleston. J. Infect. Dis. 59: 137, Sept.-Oct. 1936.

A bacteriological study.

Operative insulin crisis in resection of the pancreas, by LeG. Guerry & G. T. McCutcheon, Columbia. Ann. Surg. 104: 662, October, 1936.

Case report of a rare condition, spontaneous hyperinsulinism, with death from resection of the pancreas. The authors caution against promiscuous pancreatic resection.

Leukocyte counts in malaria; analysis of 100 cases, by E. W. Townsend. Charleston. South. M. J. 29: 1026, October, 1936.

Correlation of blood counts with clinical manifestations.

The social origins of dietary habits, by R. E. Remington, Charleston. Scient. Mo. 43: 193, September, 1936.

The author traces the present day dietary habits of man, and finds that religion, commerce, advertising and such influence play much more of a part than do the contributions of chemistry and physiology.

Studies on the relation of diet to goiter. IV. The antigoitrogenic value of some foods, by

R. E. Remington, E. J. Coulson, and Harold Levine, Charleston. J. Nutrition 12: 27, July, 1936.

The authors find the antigoitrogenic properties of various foods to be in proportion to their iodine content, as shown by experiments with rats.

Allergens in prevention and treatment of hay fever and bronchial asthma, by I. S. Barksdale, Greenville. Med. Rec. 144: 26, 1936.

The author believes in oral administration of allergens. Dust, pollen, etc., is obtained by exposing a wet cloth in the patient's environment and soaking the cloth. No specific diagnosis is made, or specific treatment attempted. If it works, this procedure should ruin the allergists.

NEWS ITEMS

Dr. W. S. Judy delivered a paper on Developments in Managing Cancer of the Mouth at a meeting of the Greenville County Dental Society held in Greenville, November 13. A large number of local dentists and several visiting physicians were present.

Dr. and Mrs. H. K. Jenkins of Marion were recent visitors at the South Carolina Sanatorium, State Park, S. C.

Dr. Ben F. Wyman, Director of County Health Work for the State Board of Health, addressed the Euphradian Literary Society at the University of South Carolina, October 27. His discussion centered around the report of the Committee on Costs of Medical Care.

The following communication concerning Dr. Hays' Hospital of Clinton, S. C. will be of interest to the members of the medical profession throughout the State.

PROTESTANT DEACONESS HOSPITAL
Evansville, Indiana

Office of the Business Administrator, Albert G. Hahn

October 16, 1936

Dr. Hays Hospital
Clinton, South Carolina.
Dear Dr. Hays:

At the meeting of the National Hospital Day Committee of the American Hospital Association at Cleveland, September 28, your report for the observance of National Hospital Day, May 5, was reviewed and given first honorable mention in the group of hospitals in cities of less than 15,000 population. We deem this quite an honor to receive honorable mention in national competition and we want to urge you to start planning now for your 1937 observance of the day.

Wesley Hospital, Wedena, Minnesota was given the certificate of award for the most outstanding observance this year.

Sincerely yours,
NATIONAL HOSPITAL DAY COMM.
Mr. Albert G. Hahn, Chairman.

Considerable interest has been exhibited in different parts of the State in a hypodermic container which has been devised by Dr. I. D. Durham, of Columbia. This container is made of aluminum, is cylinderical in shape, has a well which holds alcohol, an inner core accommodating a 1-12 or 2 cc. glass syringe, a separate compartment for the syringe plunger and receptacles for two hypodermic needles. The core, holding the syringe and needles, screws into the base and is perforated in such a way as to permit of access of the alcohol to all parts of the syringe and needles. On top of this whole assemble is an aluminum screw cap, the whole making a neat, convenient and unbreakable outfit. Here the busy doctor has a satisfactory hypodermic and needle always at hand for any emergency that may confront him. Any one interested in the matter may get further information directly from Dr. I. D. Durham, Columbia, S. C.

Dr. J. F. Busch, Supt. of the Greenville County Tuberculosis Sanatorium, spoke on Health and the Teen Age, at the Parent Teachers Asso. of the Greenville High School, November 16.

NEWS ITEMS

Dr. Leo F. Hall, Assistant Physician at the S. C. Sanatorium attended the Kershaw County Medical Society meeting, November 11 and addressed the Society on "Surgical Rest in Pulmonary Tuberculosis."

Dr. and Mrs. J. P. Harrison of Cheraw and two sons visited Mr. and Mrs. J. P. Harrison of Greenville recently, and attended the Furman-Carolina game. Dr. Harrison is an Alumnus of Furman.

The cancer or tumor clinic at Roper Hospital, Charleston, S. C. has been given a ranking as the only approved cancer clinic in North Carolina or South Carolina, and one of seven such hospital clinics in the country approved by the American College of Surgeons, according to an announcement by an official of the clinic.

Dr. L. B. Owens, Mayor of Columbia, attended the National Annual Mayor's Conference held in Washington, D. C., during the week of November 16th to 23rd.

Miss Caroline Anderson, daughter of Mr. and Mrs. John Julius Anderson and Dr. John M. van de Erve, both of Charleston, S. C. were married October 24. The ceremony took place at the French Protestant (Hugenot) Church, with the Rev. Dr. John van de Erve, pastor of the Church, and father of the bridegroom, officiating. Dr. van de Erve is a graduate of Clemson College and the Medical College of the State of S. C. He took post graduate work at Harvard University and the University of Chicago and is a specialist in Dermatology practising in Charleston.

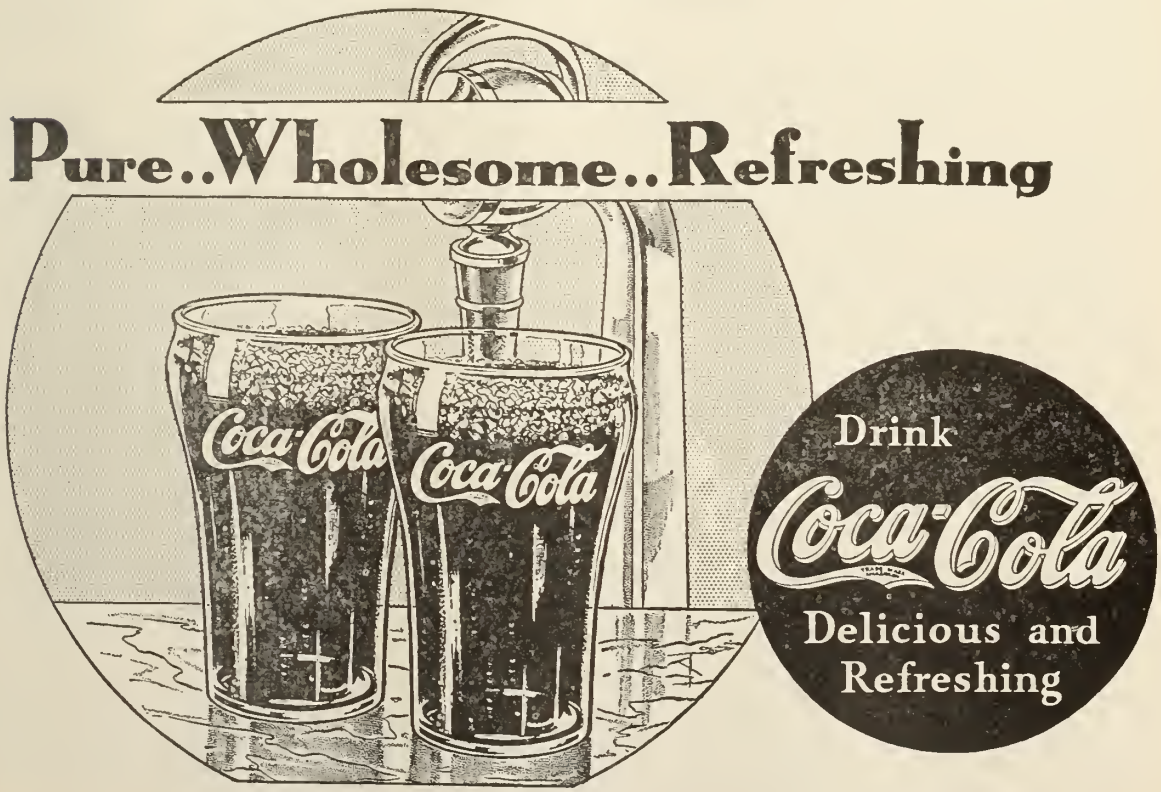
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Westbrook Sanatorium

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THE SANATORIUM is a private institution with 150 beds, located in the Ginter park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

THE PLANT consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded 50-acre lawn, surrounded by a 120-acre tract of land. Remoteness from any neighbor assures absolute quietness.

THE LARGE number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

THE BUILDINGS are lighted by electricity, heated by hot water, and are well equipped with baths.

THE SCOPE of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Five physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

SYSTEMATIZED out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

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DEXTRI-MALTOSE—

True Economy

IT is interesting to note that a fair average of the length of time an infant receives Dextri-Maltose is five months: That these five months are the most critical of the baby's life: That the difference in cost to the mother between Dextri-Maltose and the very cheapest carbohydrate at most is only $6 for this entire period—a few cents a day: That, in the end, it costs the mother less to employ regular medical attendance for her baby than to attempt to do her own feeding, which in numerous cases leads to a seriously sick baby eventually requiring the most costly medical attendance.

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PREVENT KETOSIS OF PREGNANCY WITH KARO IN THE PRENATAL DIET

"Enlarging of the uterus often causes reflex vomiting. Unless carbohydrate is taken throughout the day to maintain the blood sugar at high levels, Ketosis results. This disturbance aggravates the vomiting, frequently beyond control because of the inability of the damaged liver in pregnancy to resist Ketosis."

—Kugelmass, Clinical Nutrition in Infancy and Childhood (p. 53)

KARO is an ideal carbohydrate to combat Ketosis. Karo consists of palatable maltose and dextrose (with a small percentage of sucrose added for flavor) quickly absorbed and the non-fermentable dextrins that are gradually transformed into simple monosaccharides. Karo can, therefore, be fed in larger amounts than simple sugars without danger of digestive disorders—fermentation, distention, diarrhea...Karo may be added as Syrup or Powder to milk, cereals, gruels, fruits, vegetables, desserts and refreshments. Whatever the prenatal dietary indicated, Karo will furnish the mixed sugars necessary to combat Ketosis. And the earlier in pregnancy the addition is made the less the danger of Ketosis.



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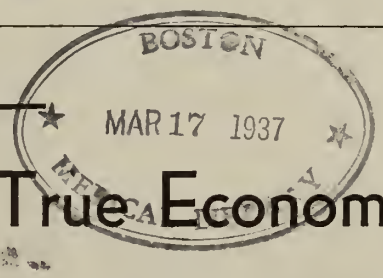
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DEXTRI-MALTOSE—True Economy



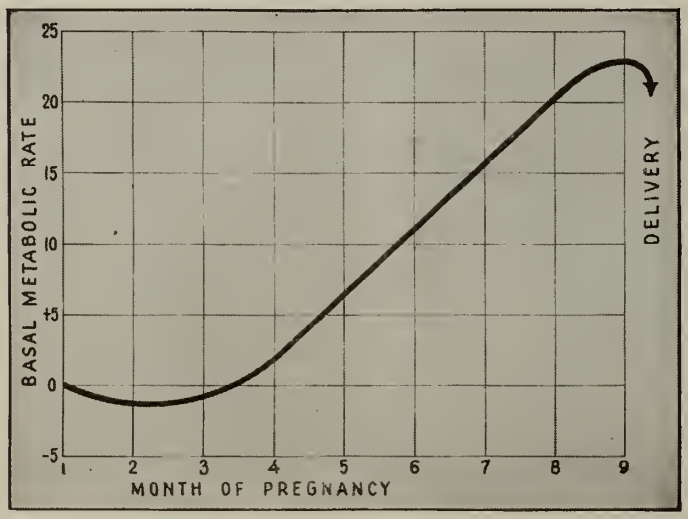
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PROTECTING THE EXPECTANT MOTHER



NORMAL PREGNANCY has its disturbances. During the first half of pregnancy the woman's metabolic rate is not changed. After the fourth month it gradually increases to 23% above her norm. Caloric increase in the diet is thus necessary after the fourth month.

But vomiting of pregnancy interferes! The condition is looked upon today as a disturbance in carbohydrate metabolism. Upon this assumption is based the present-day treatment by carbohydrate diet. The early introduction of small carbohydrate meals at 3 hour intervals helps prevent this disturbance. Karo added to foods and fluids prevents glycogen depletion and ketosis.

The enlarging of the uterus further produces reflex vomiting and unless carbohydrate is taken throughout the day to maintain the blood sugar at a high level, ketosis results. This aggravates the vomiting, frequently beyond control, because of the inability of the damaged liver in pregnancy to resist ketosis. Karo helps provide the expectant mother with readily assimilated sugars preventive of ketosis. Karo consists of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor), not readily fermentable, rapidly absorbed and effectively utilized.

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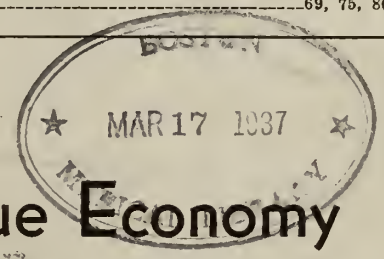
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DEXTRI-MALTOSE— True Economy

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TEN MILKS for INFANT FEEDING

but KARO *is a UNIVERSAL MODIFIER*

	Milks	*Indication*
1	Whole Milk	Normal Feeding
2	Skimmed Milk	Infection Vomiting Diarrhea
3	Top Milk	Malnutrition Constipation
4	Soft Curd Milk	Intolerance Indigestion
5	Evaporated Milk	Prematurity Marasmus Eczema
6	Dried Milk	Intolerance Allergy Travelling
7	Acid Milk	Marasmus Diarrhea Celiac Disease
8	Protein Milk	Diarrhea Celiac Disease
9	Butter-Flour Mixture	Marasmus
10	Goat's Milk	Allergy





ARTIFICIAL feeding consists of cow's milk modified to the degree of adequacy of breast milk. The types of formulæ devised appear different—but successful mixtures contain approximately the same distribution in protein, carbohydrate and fat. Two-thirds of the total calories are supplied in milk and one-third in added carbohydrate. The formulæ contain 10-20% of the calories in protein, 20-30% in fat and 50-70% in carbohydrate.

Most infants tolerate whole milk. But those with irritable gastro-intestinal tracts, limited digestive capacities or allergic sensitivities, require milk adapted to their low tolerance. As a result, milk has been altered chemically in various ways to make it especially suitable for each type of infant feeding problem. The adjacent column reveals indications for various milks.

But the ten milks available for infant feeding can be safely modified with Karo. It is adapted to every type of formula devised. Karo consists of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor) practically free from protein, starch and minerals. Karo is a non-allergic carbohydrate, not readily fermentable, well tolerated, readily digested, effectively utilized and economical for both the baby and the budget.

Corn Products Consulting Service for Physicians is available for further clinical information regarding Karo. Please Address: Corn Products Sales Company, Dept. , 17 Battery Place, New York City.

REFERENCES:

Kugelmass, Clinical Nutrition in Infancy and Childhood, (Lippincott).
Marriott, Infant Nutrition, (Mosby).
McLean & Fales, Scientific Feeding in Infancy, (Lea & Febiger).

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VOL. XXXII. GREENVILLE, S. C., APRIL, 1936 NO. 4

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DEXTRI-MALTOSE—
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SAFE WEANING *to* BOTTLE FEEDING



The Baby Regulates Breast Feeding



The Doctor Regulates Bottle Feeding

INFANTS should be weaned from the breast at eight months. The season of the year is immaterial with modern knowledge of nutrition and hygiene. Gradual weaning is desirable. It is accomplished by progressively increasing the number of bottle feedings in substitution for the breast feedings.

The formula consists of 6 ounces milk, 2 ounces water, 2 teaspoons Karo for each bottle—one the first week; two the second, etc. The schedule for additional foods remains the same as during nursing. But babies unaccustomed to the bottle often refuse it as long as the breast is available. Then abrupt weaning becomes necessary, some person other than the mother giving the feedings.

The formula in abrupt weaning prepared for the entire day consists of 24 ounces milk, 8 ounces water, 3 tablespoons Karo, divided into 4 feedings, 8

Feeding	*1st Week*	*2nd Week*	*3rd Week*	*4th Week*
6:00 A.M.	Breast	Breast	Breast	Bottle
10:00 A.M.	Breast	Breast	Bottle	Bottle
2:00 P.M.	Breast	Bottle	Bottle	Bottle
6:00 P.M.	Bottle	Bottle	Bottle	Bottle

ounces each, at 4 hour intervals. The formula can be concentrated once the baby is adjusted to the bottle feeding.

Karo is a mixture of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor) practically free from protein, starch and minerals. Karo is a non-allergic carbohydrate, not readily fermentable, well tolerated, readily digested, effectively utilized and economical for both the baby and the budget.

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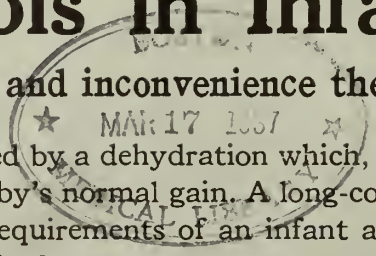
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Loose Stools in Infants

require extra diapering, and inconvenience the mother



Clinically, loose stools are accompanied by a dehydration which, when excessive or long continued, interferes with the baby's normal gain. A long-continued depletion of water is serious, since "the fluid requirements of an infant are tremendous. A normal infant 15 pounds in weight will frequently excrete as much as one litre of urine per day. A negative water balance for more than a very short period is incompatible with life." (Brown and Tisdall)

Moreover, when the condition is superimposed by chance infection, the delicate balance may be seriously upset, since the infant's reserves have already been drawn upon, so that resistance to infection and dangerous forms of diarrhea may be too low for safety. Every physician dreads diarrhea, which Holt and McIntosh call "the commonest ailment of infants in the summer months."

If you have a large incidence of loose stools in your pediatric practice—

TRY CHANGING TO A DEXTRI-MALTOSE FORMULA

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Making the First Formula Agree with the Baby

NEWBORNS require breast milk. Deprived of human milk, their nutritional requirements are met by simple mixtures of cow's milk, sugar and water. The milk may be fresh, evaporated, dried, sweet or sour; the sugar simple or mixed.

Whole milk formulas are suitable for most newborns with good digestive capacities. The amount of whole milk given should approximate ⅔ of the total required calories. And the remainder (one-third) should be in added Karo. Water is added to the mixture for the fluid intake to be about 2½ ounces per pound of baby weight per day.

Evaporated milk formulas are indicated for newborns with limited digestive capacities. They may be used to advantage in considerably higher concentrations than whole milk for premature, feeble and debilitated infants.

The added Karo is again one-third of the total required calories.

Dried milk formulas are suitable for allergic infants who will take only small volumes at a feeding and babies of allergic parents. Formulas approximately equivalent to whole milk may be made up with water and Karo added in the same ratio as in whole milk mixtures.

Acid milk formulas are of particular value for babies with low digestive capacities requiring large food requirements. Acid milk requires no dilution with water.

FORMULAS FOR THE NEWBORN

3 Ounces; 6 Feedings

Whole Milk	10 ounces
Boiled Milk	10 ounces
Karo	2 tablespoons
Evaporated Milk	6 ounces
Boiled Water	12 ounces
Karo	2 tablespoons
Powdered Milk	5 tablespoons
Boiled Water	20 ounces
Karo	2 tablespoons
Lactic Acid Milk	12 ounces
Boiled Water	8 ounces
Karo	2 tablespoons

REFERENCES:

Kugelmass, Clinical Nutrition in Infancy and Childhood, Lippincott.
Marriott, Infant Nutrition, Mosby.
McLean & Fales, Scientific Feeding in Infancy, Lea & Febiger.

The amount of Karo required may be added directly to the total volume of acid milk prescribed. Karo is an excellent milk modifier of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor) for both the baby and the budget.

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DEXTRI-MALTOSE—
True Economy

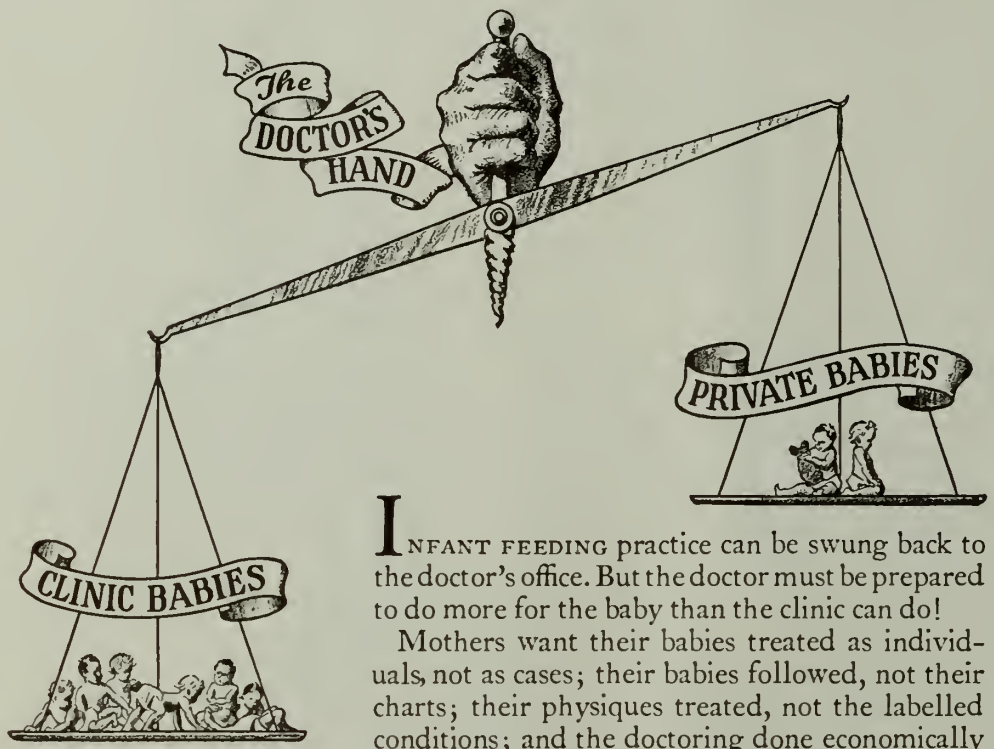
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FEWER CLINIC BABIES... MORE PRIVATE BABIES



INFANT FEEDING practice can be swung back to the doctor's office. But the doctor must be prepared to do more for the baby than the clinic can do!

Mothers want their babies treated as individuals, not as cases; their babies followed, not their charts; their physiques treated, not the labelled conditions; and the doctoring done economically and effectively.

With improved economic conditions, the trend is consequently returning to private practice. Encourage it!

The doctor knows his practice, the mother her economies. When the infant feeding materials prescribed are within the reach of every budget, mothers will appreciate the physician and babies will thrive.

Karo is a most economical milk-modifier. It consists of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor) and is suitable for every formula. Karo costs about one-fourth as much as expensive modifiers. A tablespoon of Karo gives twice the number of calories(60) in comparison with a tablespoon of any powdered maltose-dextrins, including Karo powdered. Karo is well tolerated, highly digestible, not readily fermentable and effectively utilized by infants.

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Loose Stools in Infants

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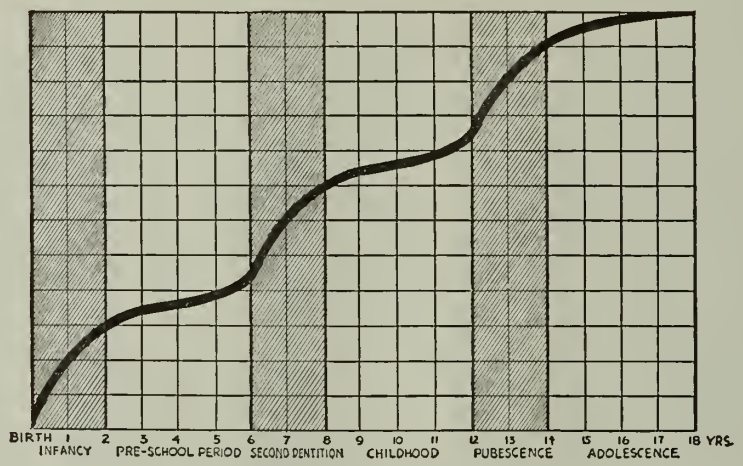
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SPEED GROWTH GAINS *with* KARO



CYCLES OF GROWTH FROM BIRTH TO MATURITY

The course of growth from birth to maturity is continuous but rhythmic. This span includes three cycles. The rapid growth in infancy is followed by the slow growth during the pre-school period; the rapid growth during the period of second dentition is followed by the slower growth during childhood; finally, the rapid growth during pubescence is followed by the slower growth during adolescence.

From Kugelmass' "Growing Superior Children", 1935. (Appleton-Century)

HOW MUCH should a child grow or gain from time to time? That is more significant than mere weight and height measurements. *To the parent* the mark on the wall and the reading on the scale reveal the child's growth. But *to the doctor* deviations from the periodic gains offer a sensitive index of dietary or disease disturbances.

The weight curve in infancy furnishes the most delicate index of progress. The birth weight doubles at five months and trebles at a year. Thereafter gains are slower; six pounds during the second year; five during the third; four during the fourth and fifth years. The trend of the first growth cycle is indicated in the chart.

This pattern of growth repeats itself during childhood and adolescence. Once the growth increments have been determined for a child, his assessment becomes individual and accurate.

When the child fails to gain in weight, high caloric feeding is simplified by reinforcing food with Karo Syrup. If the total caloric intake exceeds the output, the child will gain weight, provided the diet is adequate and chronic disturbances corrected. Every article of diet can be enriched with calories—Karo provides 60 calories per tablespoon. It is relished added to milk, fruit and fruit juices, vegetables, vegetable waters, cereals, breads and desserts. Karo consists of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor).

Corn Products Consulting Service for Physicians is available for further clinical information regarding Karo. Please Address: Corn Products Sales Company, Dept. SJ7, 17 Battery Pl., New York City





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Loose Stools in Infants

require extra diapering, and inconvenience the mother

Clinically, loose stools are accompanied by a dehydration which, when excessive or long continued, interferes with the baby's normal gain. A long-continued depletion of water is serious, since "the fluid requirements of an infant are tremendous. A normal infant 15 pounds in weight will frequently excrete as much as one litre of urine per day. A negative water balance for more than a very short period is incompatible with life." (Brown and Tisdall)

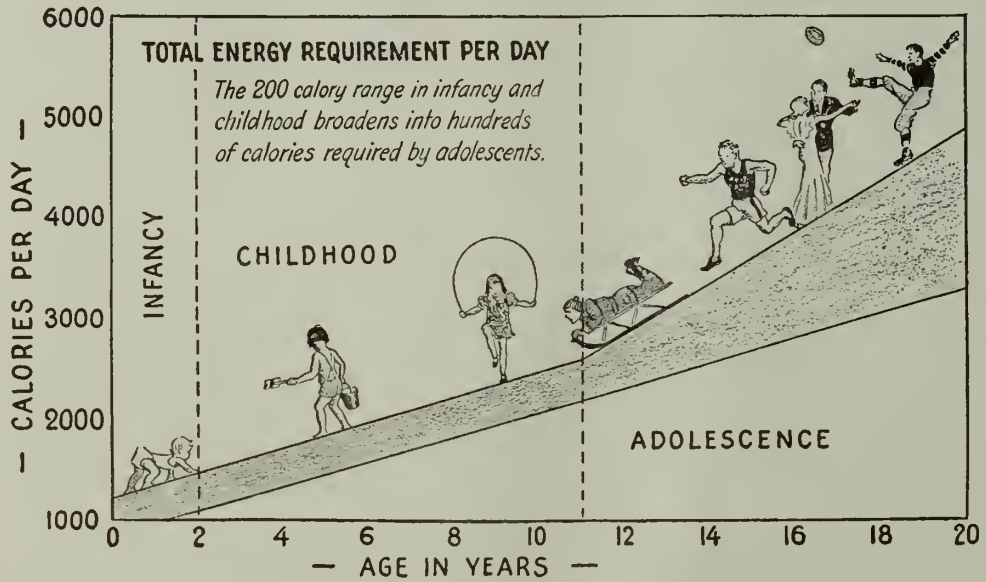
Moreover, when the condition is superimposed by chance infection, the delicate balance may be seriously upset, since the infant's reserves have already been drawn upon, so that resistance to infection and dangerous forms of diarrhea may be too low for safety. Every physician dreads diarrhea, which Holt and McIntosh call "the commonest ailment of infants in the summer months."

If you have a large incidence of loose stools in your pediatric practice —

TRY CHANGING TO A DEXTRI-MALTOSE FORMULA

When requesting samples of Dextri-Maltose please enclose professional card to cooperate in preventing their reaching unauthorized persons.
Mead Johnson & Company, Evansville, Indiana, U.S.A.

ADOLESCENT EXHAUSTION
relieved by
CALORIES *NOT* REST



NORMAL ADOLESCENT boys and girls frequently complain of fatigue. They feel weak and irritable; they show a diminished ability to concentrate; they are disinclined to work; they are physically inefficient.

Some of these symptoms are physiological manifestations of adolescent development. But on careful study many young folks do not consume enough food to provide them with the enormous energy requirements necessary during this transitional period. The symptoms are the consequence of undernutrition.

The graph reveals the sudden rise in caloric requirement during adolescence. Three hurried meals are usually insufficient to provide the tremendous caloric needs. Accessory meals, mid-morning and mid-afternoon, in certain instances, may be prescribed with advantage. And Karo added to foods and fluids can increase calories as needed. A tablespoon of Karo yields 60 calories. It consists of palatable dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor).

Karo is well-tolerated, highly digestible, not readily fermentable, effectively utilized and inexpensive.

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DEXTRI-MALTOSE—
True Economy

IT is interesting to note that a fair average of the length of time an infant receives Dextri-Maltose is five months: That these five months are the most critical of the baby's life: That the difference in cost to the mother between Dextri-Maltose and the very cheapest carbohydrate at most is only $6 for this entire period—a few cents a day: That, in the end, it costs the mother less to employ regular medical attendance for her baby than to attempt to do her own feeding, which in numerous cases leads to a seriously sick baby eventually requiring the most costly medical attendance.

"The Measure of Economy
Is Value, Not Price"

MEAD JOHNSON & COMPANY, Evansville, Ind., U. S. A.

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons.

KARO
BEFORE AND AFTER OPERATIONS

WATER BALANCE (24 HOURS)	
Intake	*Outgo*
Drinking Water (600 cc.)	Urine (800 cc.)
Beverages (600 cc.)	Skin (700 cc.)
Solid Food (700 cc.)	Lungs (600 cc.)
Metabolic Water (300 cc.)	Feces (100 cc.)

SURGEONS prepare patients pre-operatively to prevent acidosis and post-operatively to protect nutrition. Karo serves this dual purpose. Given with a soft diet before operation the patient will better resist surgical acidosis. And Karo forced with fluids after operation provides vital energy the patient craves.

Acidosis accompanies anesthesia and toxicity follows surgical trauma. Their effects may be moderated by the administration of Karo. It enriches the glycogen reserves thereby helping to prevent surgical acidosis, decrease post-anesthetic vomiting, stimulate the strained heart and combat shock.



After operation nutrition wanes when the patient cannot tolerate food. Karo with fluids helps maintain the water balance of the body and tides the patient over with basal energy. Karo provides 60 calories per tablespoon. It is relished added to milk, fruit juices and vegetable waters. Karo is a mixture of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor), well tolerated, not readily fermentable, and effectively utilized.

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

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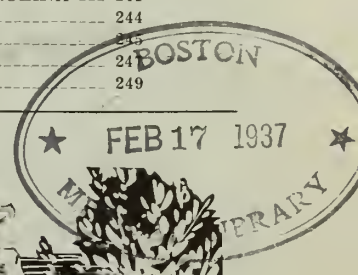
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How Much Sun Does the Infant Really Get?



Not very much: (1) When the baby is bundled to protect against weather or (2) when shaded to protect against glare or (3) when the sun does not shine for days at a time. Oleum Percomorphum offers protection against rickets 365-¼ days in the year, in measurable potency and in controllable dosage. Use the sun, too.

OLEUM PERCOMORPHUM

Price Substantially Reduced September 1, 1936!

We are hopeful that by the medical profession's continued wholehearted acceptance of Oleum Percomorphum, liquid and capsules (also Mead's Cod Liver Oil Fortified With Percomorph Liver Oil), it will be possible for us to make the patient's "vitamin nickel" stretch still further.

MEAD JOHNSON & COMPANY, Evansville, Ind. U.S.A.

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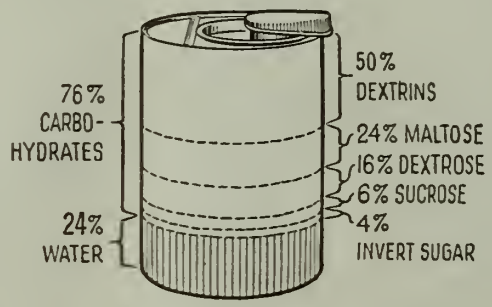


...THE TRIPLE TEST IN PRACTICE!

THE ETERNAL TRIANGLE dominates the lives of products, even as of men. In infant feeding the doctor is concerned with the three factors—*composition*, *concentration* and *cost!*

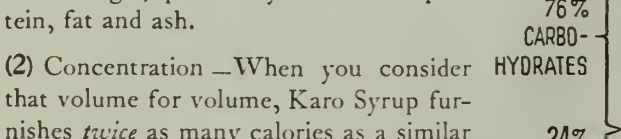
Apply the triple test in your practice. Let us now put it to Karo:

(1) Composition...When you prescribe Karo as the milk-modifier you are providing well-tolerated, readily digested maltose-dextrins-dextrose. The dextrins are non-fermentable; the maltose rapidly transformed to dextrose requiring no digestion; the sucrose added for flavor is digested to monosaccharides. Karo is prepared chemically superior, bacteriologically safe—non-allergic, practically free from protein, fat and ash.



(2) Concentration—When you consider that volume for volume, Karo Syrup furnishes *twice* as many calories as a similar sugar modifier in powdered form, you realize *how* strongly saturated Karo is in calories of maltose-dextrins-dextrose. A tablespoon of Karo Syrup yields 60 calories while a tablespoon of powdered maltose-dextrins-dextrose gives 29 calories. Karo Syrup is a concentrated milk-modifier!

(3) Cost—When you prescribe Karo you help the family out of the economic dilemma. Karo costs $^1/_5$ of the expensive carbohydrates, slashing the high cost of infant feedings. The maltose-dextrins-dextrose of Karo are marketed as a food. The saving is 80%. The Corn Products Refining Company charges for the constituents of Karo and nothing extra for the good name. Apply the triple test to milk-modifiers and you will find Karo desirable in composition, rich in calories, and inexpensive. Karo consists of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor).



Karo Syrup contains twice as many calories as... *Powdered Maltose-Dextrins-Dextrose including Karo Powdered*



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MEAD'S BREWERS YEAST

"The very recent results of Baker and Wright . . . remind us again that vitamin B_1 is not abundant in most of our foods. Most of our fresh foods contain about 1 International unit per gram."
—C. A. Elvehjem, Am. J. Pub. Health, 25:1334, Dec. 1935

Potency Doubled

without price increase

As a result of long continued research in culturing various strains of yeast, all Mead's Brewers Yeast (tablets and powder) now on the market, contains twice as many vitamin B (B_1) units as before, at no increase in price.* This improvement will be of special interest to obstetricians because the dosage may now be reduced one-half, with the same clinical effect. Authorities emphasize the importance of liberal dietetic supplements of vitamin B (B_1) during pregnancy and lactation, and for infants (breast and bottle fed), and for growing children.

*New potency—25 International vitamin B_1 units and 42 Sherman vitamin G units per gram.

Mead's Brewers Yeast Tablets in bottles of 250 and 1000. Mead's Brewers Yeast Powders in 6 oz. bottles. Bottles now packed in cartons for greater protection. Not advertised to the public. Samples to physicians, on request.

MEAD JOHNSON & COMPANY, Evansville, Ind. U.S.A.

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons.

ACIDOSIS *or* ALKALOSIS?

prescribe KARO

ACIDS galore are normally formed in the body and eliminated—carbonic, lactic, phosphoric and sulphuric. They are almost completely neutralized by base from cells, intercellular fluids and blood plasma. The body fluids thus maintain the normal faint alkalinity of pH 7.4.

But the defensive mechanisms of the body capable of preventing changes in reaction may be deranged in disease with consequent acidosis or alkalosis. Acidosis is associated with hyperpnea, diarrhea, dehydration, anoxemia, circulatory or renal insufficiency; alkalosis with excessive breathing, vomiting.

Treatment of acidosis is designed primarily to correct the underlying cause. In most types, fluids and fruit juices with Karo are forced every hour. In cases associated with ketosis (except where it is a disturbance in carbohydrate metabolism, as in diabetes mellitus) 20% dextrose is given intravenously at repeated intervals. In case of diabetes, insulin is given, by some authorities, simultaneously one unit for each gram of dextrose, until the condition is controlled.

CAUSES OF ACIDOSIS

EXCESSIVE ACID FORMATION

Acid	*Disturbance*
	Starvation
Aceto-acetic	Cyclic vomiting
B-hydroxybutyric	Diabetes
	Ketogenic diet
	Asphyxia
	Intestinal intoxication
Lactic	Respiratory failure
	Shock
	Burns

DEFECTIVE ELIMINATION

Metabolite	*Disease*
Phosphate	Nephritis
	Emphysema
Carbonic acid	Respiratory obstruction
	Myocardial failure
	Narcosis

CAUSES OF ALKALOSIS

EXCESSIVE LOSS OF ACID

	Hyperventilation
	Tetany
CO 2	Cerebral lesions (respiratory center)
	Hysteria
	Excessive crying
	Vomiting
HC l	Pyloric stenosis
	Intestinal obstruction

EXCESSIVE INTAKE OF ALKALI

NaHCO 3	in Pyelitis
	in Nephritis

From Kugelmass' "Clinical Nutrition in Infancy and Childhood" —(Lippincott)

Treatment of alkalosis depends upon the cause. The most common variety in children is that resulting from prolonged vomiting with loss of acid, salt and body water. No food is given by mouth except fluids with Karo, and saline intravenously. If alkalosis is the result of alkali administration in the presence of nephritis with poor kidney excretion of salts, large amounts of fluids with Karo will favor excess base elimination. Alkalosis from excess alkali administration is alleviated by forcing fluids with Karo.

In both acidosis and alkalosis, Karo is a carbohydrate of choice in the emergency of treatment. Karo consists of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor), not readily fermentable, rapidly absorbed and effectively utilized.

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Convalescents Require the High-Caloric Diet

COMMUNICABLE DISEASES		
Disease	*Incubation Period* (average)	*Isolation Period* (average)
Chicken Pox	12-16 Days	3-14 Days
Diphtheria	2-4 Days	After 12th Day—until cultures negative
Epidemic Meningitis	1st Week	Until cultures negative
Measles	2nd Week	Until 5 days from onset rash
Mumps	3rd Week	Duration of Swelling
Poliomyelitis	3-10 Days	21 Days
Rubella	3rd Week	Duration of catarrh and rash
Scarlet Fever	1st Week	After 21st Day—until cultures negative
Whooping Cough	2nd Week	Until 4 weeks from onset whoop

From American Journal of Public Health—March, 1927

INFECTIOUS FEVERS deplete the child's vitality. It is an exhaustion comparable to fasting. Convalescent children show a low metabolism for several weeks following the disappearance of the fever. The low metabolism is the consequence of generalized cellular damages.

When the infection clears, activity is curbed and rest periods instituted. The child is ready to gain. The problem is to bring about sufficient intake of food. The initial diet consists of small portions of each food prescribed and the amounts are gradually increased.

The high caloric diet is indispensable. It is made possible by reinforcing foods and fluids with Karo. Every article of the diet can be enriched with calories. A tablespoon of Karo provides 60 calories. Karo is relished added to milk, fruit and fruit juices, vegetables and vegetable waters, cereals, breads and desserts. Karo consists of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor), not readily fermentable, rapidly absorbed and effectively utilized.

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